# Soil Survey Laboratory Data and Descriptions for Some Soils of...

... ILLINOIS

SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE In cooperation with ILLINOIS AGRICULTURAL EXPERIMENT STATION

Soil survey investigation reports already published are listed below:

SSIR No. 1 Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples

Soil Survey Laboratory Data and Descriptions for Some Soils of:

		DOMO	DOLLED OI.
SSIR	No.	2	North Dakota
SSIR	No.	3	Iowa
SSIR	No.	14	Kansas
SSIR	No.	5	Nebraska
SSIR	No.	6	Arkansas, Louisiana, and Missouri
SSIR	No.	7	Montana
SSIR	No.	8	Wyoming
SSIR	No.	9	Minnesota
SSIR	No.	1.0	Colorado
SSIR	No.	11	Oklahoma
SSIR	No.	12	Puerto Rico and the Virgin Islands
SSIR	No.	13	Mississippi
SSIR	No.	14	Kentucky
SSIR	No.	15	Tennessee
SSIR	No.	16	North Carolina, South Carolina, and Georgia
SSIR	No.	17	Wisconsin
SSIR	No.	18	Indiana

## Soil Survey Laboratory Data and Descriptions for Some Soils of...

## ... ILLINOIS

April 1968

SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE In cooperation with ILLINOIS AGRICULTURAL EXPERIMENT STATION

1. SAMPLE COLLECTION AND PREPARATION 5A. Cation-exchange capacity (cont.) 6. CHEMICAL ANALYSES (cont.) A. Field sampling 2. NaOAc, pH 8.2 J. Bicarbonate a. Centrifuge method 3. Sum of cations 1. Saturation extract 1. Site selection a. Acid titration 2. Soil sampling a. Acidity by BaCl<sub>2</sub>-TEA, pH 8.2; bases by NH<sub>4</sub>OAc, pH 7.0 K. Chloride a. Stony soils B. Laboratory preparation 1. Saturation extract Standard (airdry) 4. KOAc, pli 7.0 a. Mohr titration b. Potentiometric titration a. Square-hole 2 mm sieve b. Round-hole 2 mm sieve 5. BaCl2, pH 8.2 a. Barium by flame photometry L. Sulfate 1. Saturation extract 2. Field moist B. Extractable bases a. Gravimetric, BaSO<sub>4</sub> 1. NH4GAc extraction Carbonate-containing material 2. NH4OAc extraction Carbonate-indurated material a. Uncorrected a. Gravimetric, BaSO4 2. CONVENTIONS b. Corrected (exchangeable) 2. KC1-TEA extraction, pH 8.2 M. Nitrate A. Size-fraction base for reporting 1. Saturation extract 1. <2-mm C. Base saturation 1. NH4OAc, pH 7.0 2. NaOAc, pH 8.2 3. Sum of cations a. PDS acid colorimetry 2. <size specified N. Calcium B. Data-sheet symbols l. Saturation extract trace, not measurable by quantitative procedure used tr: a. EDTA titration D. Sodium saturation 2. NH4OAc extraction or less than reportable (exchangeable Na pct.) a. EDTA-alcohol separation amount 1. NaOAc, pH 8.2 b. Oxalate-permanganate I tr(s): trace, detectable only by 2. NH4CAc, pH 7.0 E. Sodium adsorption ratio qualitative procedure more c. Oxalate-permanganate II Fe, Al, and Mn removed d. Oxalate-cerate sensitive than quantitative CHEMICAL ANALYSES procedure used A. Organic carbon 3. NH4C1-EtOH extraction analysis run but none 1. Acid-dichromate digestion a. EDTA titration a. FeSO<sub>4</sub> titration detected -(s): none detected by sensitive b. CO2 evolution, gravimetric 4. KC1-TEA extraction a. Oxalate-permanganate qualitative test 2. Dry combustion O. Magnesium blank: analysis not run a.  $CO_2$  evolution I b. CO<sub>2</sub> evolution II 3. Peroxide digestion 1. Saturation extract nd: analysis not run less than reported amount or a. EDTA titration <; 2. NH4OAc extraction none present a. Weight loss a. EDTA-alcohol separation 3. PARTICLE-SIZE ANALYSES B. Nitrogen b. Phosphate titration 1. Kjeldahl digestion A. < 2-mm fraction (pipet method) c. Gravimetric, Mg<sub>2</sub>P<sub>2</sub>O<sub>7</sub> 1. Airdry samples a. Ammonia distillation 3. NHAC1-EtOH extraction 2 Semimiaro Kieldehl a. Flame photometry clay a. Dichromate titration 2. NH4OAc extraction B. > 2-mm fraction b. EDTA titration 2. Dithionite-citrate extraction a. Flame photometry l. Weight estimates Q. Potassium 2. Volume estimates a. Orthophenanthroline

colorimetry

colorimetry

extraction

Dithionite extraction

4. Pyrophosphate-dithionite

extraction

Calcium carbonate

D. Manganese

3. Dithionite-citrate-bicarbonate

a. Permanganate colorimetry

a. Potassium-thiocyanate

4. FABRIC-RELATED ANALYSES

b. Airdry

1. Saran-coated clods

a. Field state

Ovendry

30-cm absorption

d. 1/3-bar desorption I

e. 1/3-bar description II

f. 1/3-bar desorption III

1/10-bar desorption

A. Bulk density

1. Saturation extract

2. NH4OAc extraction

R. Sulfur

a. Flame photometry

a. Flame photometry

a. Methylene blue

S. Total phosphorus

1. NaHCO3 extraction, pH 8.5

1. Perchloric-acid digestion

acid colorimetry

a. Molybdovanadophosphoric-

### PREFACE

This publication is one in a new U.S. Department of Agriculture series established to preserve and make available technical information resulting from soil survey investigations. These investigations have been going on for about two decades. Data from them have been distributed in unpublished form to those immediately concerned. Some of the data and descriptions have appeared in technical journals, in regional bulletins, in USDA technical bulletins, and in the text of published soil surveys. But most were not available to all who might use them.

We intend to publish in this series all data from the soil survey laboratories that form reasonably complete characterizations of soils. Already-assembled data and descriptions will be published just as rapidly as they can be prepared for printing. Fragmentary data collected as reference points for specific soil surveys will not be included.

While these data were being assembled, there were many changes in laboratory methods. Some were improved and some new ones were devised. Consequently, laboratory data for different soils cannot always be directly compared without allowance for the method.

The method used is indicated by symbol in the column headings of the data table. These symbols are identified in the code sheet on the opposite page. Each method is described in the first number of this series, "Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples," SSIR No. 1.

Ways of describing soils have also changed. Soil descriptions have become explicit on more and more features. The systems for designating horizons and for classifying soils have been changed.

The soil descriptions published here were prepared as working documents to meet a specific need of a soil survey at the time the soil samples were collected. The soil scientists who wrote them had no idea they would be published. Editing has been limited for the most part to that necessary for conformance to the "Soil Survey Manual." Field textural estimates have been retained, even though some are at variance with the laboratory data, because the field estimates themselves are important data.

There were several reasons for sampling these soils. Some were sampled to study soil genesis, some to facilitate classification, and some to obtain data to permit more useful interpretations. Those sampled for genesis or classification studies do not always fit neatly into our present concepts of soil series. Partly because of these studies, our concepts of some soil series have been modified. As a consequence, the soil series name assigned a soil at the time of sampling is not always the name that would be assigned today. Soil series names in this publication follow 1965 series definitions.

Soil Survey Soil Conservation Service

County	Soil Series	Soil Survey No.	Page	County	Soil Series	Soil Survey No.	Page
Adams	Clarksdale	\$55ILL-1-5	61	Lawrence	Weir	S50ILL-51-4	207
	Clinton	S51ILL-1-7	75		Whitson	S50ILL-51-2	211
	Rozetta	S55ILL-1-3	177	Lee	Lamont	\$54ILL-52-1	159
Alexander	Alford	Só2ILL-2-4	3	Livingston	Drummer	S57ILL-53-1	107
	Alvin	S54ILL-2-4	11		*Reddick	S57ILL-53-2	175
	Hosmer	S62ILL-2-1	139	Macoupin	Clarksdale	360T11-59-2	69
	Muren	S62ILL-2-2	161		Clinton	21ª	77
	Muren	S62ILL-2-3	163		Herrick	S60I11-59-1	135
Boone	Ellison	S60ILL-4-1	113		Hosmer	S59I11-59-1	147
Carroll	Colo	S63ILL-8-1	81	McHenry	Camden	S53I11-56 <b>-</b> 9	55
4,01100	Fayette	12 a	117	richteni j	Camden	853I11-56-10	57
	Fayette	14 a	119		Ellison	S60I11-56-1	115
	Seaton	13 a	191	Marshall	Sable	S57ILL-62-1	183
Champaign	Camden	\$53ILL-10-4	43	Mason	Alvin	S54ILL-63-3	21
Originhargii	Drummer	S57IIL-10-1	93	Massac	Wheeling	\$53ILL-64-5	209
	Drummer	S57ILL-10-2	95	Menard	Clary	548ILL-65-4	73
	Drummer	S57ILL-10-3	97	Heliai a	Rushville	S48ILL-65-1	181
Christian	Clarksdale	S60ILL-11-1	63		Sable	\$48ILL-65-3	185
OLIT TO OTALL	Clarksdale	\$60ILL-11-2	65		Tama	S48ILL-65-2	199
	Clarksdale	S60ILL-11-3	67	Mercer	Camden	S53TLL-66-2	53
Clark	Ambraw	S63ILL-12-1	27	Montgomery	Ava	S59ILL-68-1	31
DeWitt	Camden	S53ILL-20-3	45	11011 0E 01101 J	Cowden	S60ILL-68-1	83
Fulton	Camden	S53ILL-29-1	47		Cowden	S60ILL-68-3	85
Gallatin	Alford	S56ILL-30-1	5		Cowden	S60ILL-68-4	87
001100111	Allison	S63ILL-30-1	9		Herrick	S60ILL-68-2	137
	Alvin	S54ILL-30-9	13		Hosmer	S59ILL-68-2	149
	Hosmer	S56ILL-30-2	141	Ogle	Fayette	11 a	123
Iroquois	Alvin	S54ILL-38-8	15	Pike	Bolivia	S55ILL-75-4	39
	Drummer	S57ILL-38-1	99		Clarksdale	S55ILL-75-8	71.
	Drummer	S57ILL-38-2	101		Fayette	\$55ILL-75 <b>-1</b>	125
Jackson	Beaucoup	S63ILL-39-2	35		Fayette	S55ILL-75-10	127
	Newart	S63ILL-39-1	171		Muscatine	S55ILL-75-2	165
Johnson	Hosmer	S62ILL-44-2	143		Muscatine	\$55ILL-75-6	167
	Sciotoville	\$53ILL-44-6	193		Muscatine	S55ILL-75-9	169
	Wartrace	S62ILL-44-1	205	Pope	Grantsburg	S49ILL-76-1	131
Kankakee	*Reddick	S57ILL-46-1	173	Putnam	Alvin	S54ILL-78-2	23
LaSalle	Drummer	\$57ILL-50-1	103	Pulaski	Hosmer	S49ILL-77-1	151
	Drummer	S57ILL-50-2	105	Union	Hosmer	S49ILL-91-1	153
	Fayette	S61ILL-50-1	12]	Warren	Clinton	15ª	79
	Rozetta	S61ILL-50-2	179		Sable	S57IIL-94-1	187
	Stronghurst	S61ILL-50-5	195	Wayne	Bonnie	S63TLL-96-1	41
	Traer	S61ILL-50-3	201	Will	Alvin	S54ILL-99-7	25
	Traer	S61ILL-50-4	203		Ashkum	S57ILL-99-2	29
Lawrence	Alford	S50 <b>ILL-5</b> 1-1	7		Clarence	S48ILL-99-5	59
	Alvin	8541LL-51-5	17		Drummer	S57ILL-99-1	109
	Alvin	S541LL-51-6	19		Elliott	S48ILL-99-1	111
	Camden	\$53ILL <b>-</b> 51-7	49		Frankfort	S51ILL-99-1	129
	Camden	S53ILL-51-8	51		Saybrook	S48ILL-99-4	189
	Darwin	S50ILL-51-7	89		Swygert	S48ILL-99-3	197
	Darwin	S63ILL-51-1	91	Williamson	Ava	S51ILL-100-3	33
	Hagener	S50TLL-51-5	133		Bluford	S51ILL-100-4	37
	Hosmer	S50ILL-51-3	145		Hosmer	S51ILL <b>-</b> 100-1	155
					Hosmer	S51ILL-100 <b>-</b> 2	157

 $<sup>\</sup>boldsymbol{\ast}$  Soil series names preceded by an asterisk are names of tentative series.

 $<sup>^{\</sup>mathbf{a}}$  Determinations by University of Illinois.

### ILLINOIS

Soil Series	County	Soil Survey No.	Page	Soil Series	County	Soil Survey No.	Page
Alford	Alexander	S62III-2-4	3	Drummer	Livingston	\$57 <b>II1-</b> 53-1	107
	Gallatin	S56I11-30-1	5		Will	S57III-99-1	109
	Lawrence	S50I11-51-1	7	Elliott	Will	S48II1-99-1	111
Allison	Gallatin	S63II1-30-1	9 11	Ellison	Boone	S60I11-4-1	113
Alvin	Alexander Gallatin	S54I11-2-4 S54I11-30-9	13	W44 -	McHenry	S60T11-56-1 12 <sup>8</sup>	115
	Iroquois	S54III-30-9 S54II1-38-8	15	Fayette	Carroll Carroll	12" 14a	117
	Lawrence	S54III-51-5	17		LaSalle	56 <u>]</u> T11-50-1	119 121
	Lawrence	S54I11-51-6	19		Ogle	11 <sup>a</sup>	123
	Mason	\$54 <b>I</b> 11-63-3	21		Pike	S55 <b>I11-7</b> 5-1	125
	Putnam	S54I11-78-2	23		Pike	S55III-75-10	127
Ambraw	Will Clark	\$54 <b>111-99-7</b>	25	Frankfort	Mīll	S51I11-99-1	129
Ambraw Ashkum	Will	S63I11-12- <b>1</b> S57I11-99-2	27 29	Grantsburg Hagener	Pope Lawrence	549I11-76-1 S50I11-51-5	131
Ava	Montgomery	S59 <b>T11-</b> 68-1	31	Herrick	Macoupin	S60I11-51-5	133 135
	Williamson	S51II1-100-3	33		Montgomery	\$60I11-68-2	137
Beaucoup	Jackson	S63T11=39=2	35	Новтот	Mavanden	ו מ ווזמאף	130
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SOIL Alford silt loam

SOIL SURVEY LABORATORY Lincoln, Nebraska 16926-16934 March 1966 LAB. Nos. General Methods: 1A, 1B1b, 2A1, 2B Size class and particle diameter (mm) 3A1. 2A2 Coarse fragments Silt 4Elc Moved. Şilt Fine Int, III Int. Ⅱ Sand Clay Coarse Very fine Horizon Depth 2 - 19 | 19 - 76 Clay (1–0.5) (0.5–0.25) (0.25–0.1) (0.1–0.05) (0.05–0.02) (0.02–0.002) coarse (2-1) (2-0.05)(< 0.002)(2-0.1)(In.) (0.05-0.002) Pct. of < 76mm Pct. Pct 84.7 35.5 36.5 0-5 2.4 12.9 0.1a O.la 0.15 0.26 1.9c 49.2 51.2 45.3 0.5 Tr. 5-10 Βĺ 2.2 80.i 17.7 25.8 0.lb 0.1ъ 0.2ъ 0.3ъ 1.5c 43.6 0.7 0.4 Tr. 10-18 B21 2.1 72.1 0.16 0.26 0.2ъ 0.2ъ 1.4b 38.4 33.7 39.9 0.7 1.4 Tr. 33.5 35.3 34.7 33.8 32.0 18-30 B22 2.1 70.0 72.9 27.9 0.15 0.15 0.3b 0.3b 1.60 36.5 37.6 38.3 39.2 0.5 2.2 30-43 25.2 1.4b 0.5 2.4 B23 1.9 0.15 0.15 42.1 44.4 75.1 76.6 1.30 40.4 2.8 43-55 23.0 0.16 0.1b 0.40 0.6 B31 1.9 55-68 21.5 42.8 B32 1.9 0.16 0.1b 0.25 1.50 0.4 -46.3 45.7 76.4 68-82 2.2 0.1ъ 0.1ъ 0.2ъ 1.8b 44.4 0.4 2.0 **B33** 0,4 20.4 0.1b 44.1 33.6 82\_92 1.9 77.7 0.1b 0,2ъ 1.5c 3.1 Bulk density Water Content 6Ala 6Bla 602a 4111 4A1b 4B4 4B3 4B1b 4c1 8Cla Ext. 4Ala | 4Alc 4B2 COLE Depth Organic Nitrogen Ç/N Iron Field. Air-Field. 1/3-min (tn.) carbon as CaCO<sub>s</sub> anState 30-Cm Dry State |30--Cm.|1/3-Bar|15-Be 8.8 us 15-₫ Pct Pct Pet in./in 21.5 5.6 21.1 7.3 0.8 1.46 1.45 1.48 0.007 7.8 11.2 6.5 0-5 1.00 0.106 0.23 1.47 0.014 1.56 0.024 23.7 24.7 0.054 8 1.47 1.42 9.6 6.0 5-10 0.41 1.0 0.20 10-18 18-30 0.25 1.51 22.1 10.8 6.0 5.4 0.16 **D.**043 6 1.6 1.52 1.48 1.62 26.9 25.0 11.8 0.20 lo\_032 1.47 1.46 30-43 1.6 1.50 1.58 0.024 25.0 27.8 25.8 11.3 4.8 0.14 0.21 1.50 28.6 28.7 43-55 55-68 1.4 1.56 0.020 25.9 25.2 10.2 0.22 4.7 0.10 1.52 0.020 1.52 0.024 1.55 0.028 1.4 1.43 29.0 25.3 9.5 4.7 0.06 0.23 68-82 0.06 1.5 1.4 1.46 1.41 27.9 30.2 25.3 10.2 0.21 4.8 29.4 82-924 1.43 26.9 26.1 9.8 4.7 0.05 0.23 6HLa Cat. Exch. 6С1Ъ 8D3 Base saturation 5C3 6M2a 602a 6P2a 692a KC1-Depth Ext. 5A3a Ca/Mg Ext. Mg Supa Acidity Sum Cation TH, OA Cation annu OAc Pct Pct meq/100 g 1.6 104 8.4 10.0 0-5 7.4 6.3 0.8 Tr. 0.2 3.5 4.5 11.2 69 85 5-10 1.2 Tr. 0.2 7.7 9.1 5.2 11.9 19.6 90 88 8.5 12.4 13.8 15.4 2.4 73 69 10-18 0.3 3.5 0.1 6.0 13.6 1.7 18-30 30-43 8.2 4.9 0.1 4.2 8.6 19.2 55 72 0.3 10.6 1.2 6.0 0.1 8.6 17.7 13.9 13.7 14.6 1.8 1.4 <u>65</u> 43-55 9.1 51 3.6 0.3 5.1 0.1 8.3 9.1 8.9 17.2 1.6 1.4 65 55-68 3.5 3.9 5.0 0.1 0.3 19.2 18.2 1.4 1.5 53 69 0.2 10.1 68.82 5.7 0.3 <u>72</u> 0,2 82-924 6.0 3.6 0.3 10.1 8.1 Ratios to Clay 8Dl > 50% organic matter fragments. > 50% Fe-Mn nodules. ъ. Depth 25-50% Fe-Mn nodules.
5.4 Kg/MP to 60 inches. (Method 6A) nh<sub>li</sub>oac Cec 15-Bax Ext. c. (ln.) Water Tron 0.062 0-5 0.63 0.43 0.056 0.054 5-10 0.41 0.51 10-18 0.42 0.53 0.057 0.42 18-30 30-43 0.55 0.59 0.45 0.44 0.061 43-55 0.60 0.44 55-68 68-82 0.065 0.070 0.069 0.64 °.48 °.48 0.68 82-92+

SOIL Nos. 862 111-2-4 LOCATION Alexander County, Illinois

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Soil Type: Alford silt loam Soil Nos.: S62II1-2-4

Location: Alexander County, Illinois, Tl4s, R2W, Sec. 29, NE 160, NW 40, SE 10, 137 steps east of large mulberry

tree on ridge top, 66 steps south of gully in draw.

Parent Material: Deep loss. Physiography: Upland ridge top.

Drainage Class: Well.

3 percent.

Vegetative Cover: Grass (pasture).

Sampled by: R. B. Grossman and G. S. Holmgren, May 24, 1962.

Described by: G. O. Walker, J. B. Fehrenbacher, C. C. Miles and W. D. Parks.

Horizon and Lincoln

Lab. No.

B32

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0 to 5 inches. About 50 percent dark grayish brown (10YR 4/2) and about 50 percent brown (10YR 4/3) silt Ap 16926 loam; moderate thin platy structure; friable; many roots; pH 7.0; abrupt smooth boundary.

5 to 10 inches. Dark brown to brown (7.5YR 4/4) silt loam; weak to moderate medium subangular blocky structure; friable to firm; peds coated with thin pale brown (10YR 6/3) silt; many roots and worm channels; 16927 pH 6.5; clear smooth boundary.

10 to 18 inches. Dark brown to brown (7.5YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; peds coated with thin continuous brown (7.5YR 4/4) clay films, and when dry thin light gray B21 16928 (10YR 7/1) silt which fades when moist; many roots; pH 6.5; gradual smooth boundary.

18 to 30 inches. Bark brown to brown (7.5YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; peds coated with thick continuous brown (7.5YR 4/4) clay films and when dry a thin light gray **B2**2 16929 (10YR 7/1) silt coating which fades when moist; many roots and few very dark gray (10YR 3/1) Fe and Mn concretions; pH 6.0; gradual smooth boundary.

30 to 43 inches. Dark brown to brown (7.5YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; peds coated with medium continuous brown (7.5YR 4/4) clay films and when dry a thin light gray **B2**3 16930 (10YR 7/1) silt coating which fades when moist; few Fe and Mn concretions; pH 5.5; clear smooth boundary.

43 to 55 inches. Dark brown to brown (7.5YR 4/4) light silty clay loam; moderate medium subangular blocky structure; firm; peds coated with thin continuous brown (7.5YR 4/4) clay films, and when dry thin continuous pale brown (10YR 6/3) silt which fades when moist; pH 5.0; clear smooth boundary. B31 16931

55 to 68 inches. Very pale brown (10YR 7/4) heavy silt loam; weak medium and coarse subangular and angular

brown (10YR 6/3) silt coating which fades when moist; pH 5.0; gradual smooth boundary.

68 to 82 inches. Brown (10YR 4/3) to dark brown (10YR 3/3) silt loam with few coarse faint pale brown B33 16933 (10YR 6/3) mottles; weak coarse subangular and angular blocky structure; friable; peds coated with thin brown (7.5YR 4/4) clay films; pH 5.0; gradual smooth boundary.

82 to 92 inches plus. Erown (10YR 4/3) and dark yellowish brown (10YR 4/4) silt loam with few coarse 16934 faint pale brown (10YR 6/3) mottles; coarse blocky structure to massive; friable; pH 5.0.

138 inches. Silt loam; pH 6.0.

Remarks: Colors are for moist conditions unless otherwise stated. This is a very thick solum with clay flows throughout the B horizon and into the C horizon. The B horizon when dry has a distinctive light gray silt coating which fades away when the peds are moistened. This profile is highest in elevation of three profiles sampled in a transect. Downslope are Muren (862111-2-2) on sideslope and Muren (862111-2-3) in the footslope position.

Mineralogy (Method 7A).

B21 horizon: Clays contain small to moderate amounts of montmorillonite, mica and kaolinite, a small amount of vermiculite and a trace of an interstratified chlorite mineral. The montmorillonite is poorly ordered; the other minerals are rather well ordered.

B32 horizon: The clays contain a small to moderate amount of montmorillonite and small amounts of chlorite, vermiculite, mica, kaolinite and an interstratified chlorite mineral. The minerals are rather well crystallized.

Ridgetop

silt loam

SOIL TYPE Alford LOCATION Gallatin County, Illinois

SCIL NOS. S55Ill-30-1

LAB. NOS. 5506-5514

DEFTH		lBla		PARTI	CLE-SIZ	E DISTRIB	ui) MOITE	mm•/ (pe	r cent) 3/	<u> </u>		147417417451744447
DEFTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURA CLASS
		2.1	1-0.5	0.5-0.25	0.25-0.10	0, 10-0.05	0,05-0,002	< 0.002	0.2-0.02	Q02-Q002		
0-4	Ар	0.la	0.la	0.la	0.2a	0.7a	86.6	12.2	41.6	45.8	-	sil
4-11	A2	-	0.la	0.1a	0.2a	0.4a	85.4	13.8	39.3		_	sil
11-14	Bl	-	_	-	-	0.4a	81.2	18,4	34.3	47.3	-	sil
L4-19	B21	-	_	-	_	0.4a	74.5	25.1	32.1	=	-	sil
L9-32	B22	_	-	-	0.1a		69.2	30.2	31.7	_	_	sicl
32-47	B31	-	_		0.la	0.7a	73.0	26.2	35.2	38.6	_	sil
+7 <b>-</b> 62	B32	_	-	_	0.la	0.4a	77.2	22.3	42.1	35.6	_	sil
2-75	Cī	-	_		_	0.3a	86.0	13.7	•		_	sil
)3 <b>-1</b> 19	CS	0.3	0.5	0.4a	3.8a	3.1a	77.2	14.6		39.1		sil
J		• • •				J. 2				32.7		
*************	рΗ	15414-14-1414141		ANIC MA		***************************************	ELECTRI-	6Ela	*64:51414618:1010	Ъ	WATER	CONTE
8Cla	1		6Ala	6Bla		EST%	CAL			Bulk	ъ	4 <u>T</u>
			ORGANIC			SALT (BUREAU	TIVITY EC - 103	CaCO3 equiv-	GYPSUM	Den-	Field	-
	1:5	1:10	CARBON	GEN	C/N	CUP)	MILLIMHOS	alent	me,/190g.   SOVL	sity		15-Ba
1:1			%	o <del>r</del> .			FER CM	ሜ		g/cc	96	%
7.2			1.74	.163	n	~				1.12	19.2	6.3
5.8			0.74	.073	:					1.23	15.7	5.5
5.2			0.31	.036						1.020	ا • رس	6.9
5.2			0.35	.041						1.40	10.3	9.4
5.1			0.32	.033			,			1.43	18.2	12.4
5.0			0.10	•000						1.45	22.1	11.3
5.6			0.09							1.47	23.5	10.6
ó.8			0.03							1.49		6.8
			0.08							1.49	24.5	5.8
7.7			0.00					-				7.0
5Ala		EXTRAC	TABLE	CATIONS	5Bla	5C1	5C3	5Bla	5A3a	11. 1714	8 <b>0</b> 3	 
CATION	6N2p	602ъ	6нца	6P2a	602a	Base	Base	Sum	Sum		_	
KCHANGE APAC: TY	Ca		н	No	ĸ	Sat.%	Sat.%	Ext.	Ext.		Ca/Mg	
NHi <sub>L</sub> Ac	!	Mg				NH <sub>L</sub> Ac	on Sum	Bases	Cations		, i	
. T		mulitequiv	alents per	100g, sail	$\longrightarrow$	т-	Cations	me/	100g			
10.8	8.4	2.8	1.6	-	0.7	100	86	11.9	13.5		3.0	
7.1	3.4	1.2	3.6	-	0.4	70	58	5.0	8.6		2.8	
7.9	3.3	1.6	4.5	0.1	0.3	67	54	5.3	9.8		2.1	
11.4	4.7	2.3	5.3	-	0.4	69	60	7.9	13.2		1.7	
16.1	5.5	5.4	7.9	-	0.5	71	59	11.5	19.4		1.0	
	4.2	5.1	7.4	0.1	0.4	67	57	9.8	17.2		0.8	
14.6	6.2	6.0	3.7	0.2	0.3	85	77	12.7	15.4		1.0	
14.6 15.0		~ ~	2.4	0,1	0.2	94	60	9.4	11.8		1.3	
:	5.2	3.9	. 4-17		: :	- 1	85	0.1	11.0		n 1.	•
15.0 10.0	5.2			_	0.1	100	. 0)	7.4	: 44		1.4	}
15.0	5.2		1.6	-	0.1	100	U)	9.4	11.0		aL a ⁴∜	
15.0 10.0 8.8	5.2 5.4	3.9	1.6			_	٥٦	9.4	4.1.0		aL = <sup>4</sup> \$	
15.0 10.0 8.8 a. F	5.2 5.4 ew smo	3.9 oth da	1.6 rk bro Unive	wn con	er. (M	n-Fe?) inois.	Core Me	thod -	Uhlan	il. R.	E	
15.0 10.0 8.8 a. F	5.2 5.4 ew smo	3.9 oth da	1.6 rk bro Unive	wn con	er. (M	n-Fe?) inois.	Core Me	thod -	Uhlan	il. R.	E	)
15.0 10.0 8.8 a. F b. D	5.2 5.4 ew smo etermi Soil analy	3.9 oth danged by Sci.So	1.6  rk bro  Unive  c. Am.  the B	wn con rsity Proc. horiz	cr. (M of III 14:36 on sho	n-Fe?) inois. i-366 ] wed the	Core Me 950. (s	thod - t "Fie be do	Uhlan	il. R.	E	) Ionite
15.0 10.0 8.8 a. F b. D	5.2 5.4 ew smo etermi Soil analy	3.9 oth danged by Sci.So	1.6  rk bro  Unive  c. Am.  the B	wn con rsity Proc. horiz	cr. (M of III 14:36 on sho	n-Fe?) inois. i-366 ] wed the	-	thod - t "Fie be do	Uhlan	il. R.	E	) Ionite

Soil type: Alford silt loam

S5611-30-1 Soil Nos.

Location: Gallatin County, Illinois; 497 feet north of 1/2-section line, east side of road, NE160, SE40, SW10 of Section 22, T73, R9E.

Vegetation: Bluegrass. Drainage: Well drained. Relief: 2 to 3 percent.

Erosion: Slight.

Sampled by: R. T. Odell, J. K. Ableiter, A. Beavers, G. O. Walker, and O. C. Rogers, October 31, 1956.

Horizon and Lincoln Lab. Number

5506

0 to 4 inches. Dark grayish brown (10YR 4/2 moist) silt loam; weak fine granular structure; friable when

moist; abrupt smooth boundary.

A2 5<u>507</u>

B31 5511

4 to 11 inches. Brown (10YR 4/3 to 5/3 moist) silt loam; very weak thin platy structure; friable when moist: numerous fine roots and small worm casts, the latter filled with An material: abrunt wave boundary

11 to 14 inches. Yellowish brown (10YR 5/6 moist) to strong brown (7.5YR 5/6 moist) heavy silt loam; Bl 5508 weak to moderate fine and medium subangular blocky structure; slightly firm when moist; abrupt wavy boundary.

14 to 19 inches. Dark brown (7.5YR 4/4 moist) heavy silt loam to light silty clay loam; moderate medium B21 5509 subangular blocky structure; firm when moist; a few thin clay skins or coatings of dark brown (7.5YR 4/2 moist); clear smooth boundary.

19 to 32 inches. Dark brown (7.5YR  $^4/^4$  moist) light silty clay loam; numerous distinct dark brown (7.5YR  $^4/^2$  moist) clay coatings or skins on peds; a few fine coatings and streaks of light yellowish brown (10YR  $^6/^4$  moist) and very dark brown (10YR  $^6/^2$  moist); moderate to strong medium to coarse sub-R22 5510 angular blocky structure; firm when moist; clear smooth boundary.

32 to 47 inches. Brown (7.5YR 5/4 moist) heavy silt loam; a few prominent reddish brown (5YR 4/4 moist) clay skins; a few very dark brown (10YR 2/2 moist) streaks and coatings; light yellowish brown (10YR 6/4 moist) coatings on numerous peds and as root channel and crack filling; weak coarse subangular blocky structure; firm when moist; gradual wavy boundary.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

COU Alford silt loss cou and 850711-5	
SOIL SOIL Nos. SSOIII-5	51-1 LOCATION Lawrence County, Illinois
SOIL SURVEY LABORATORYBeltsville, Maryland	LAB. Nos. 501297 - 501302

	1	1B1b						Size clas	ss and parti	cle diamete	er (mm) 3A	1					
	1		Total					Sand		Şi	lt		T 1	3B2	Coa	rse fragme	ents 3BI
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05– 0.002)	Clay ( < 0.002)	Very coarse (2-1)		Medium (0.5–0.25)		Very fine (0.1–0.05)	0.05-0.02	int, III (0.02– 0.002)	Int. <b>11</b> (0.2–0.02)	(2–0.1)	Cm	2A2 >> 2	2 - 19	19-76 ct. of
0-6 6-12 12-17 17-25 25-36 36-12	A1 A2 B1 B2 B3 C1	2.0 1.8 1.3 0.8 1.2 2.6	85.9 82.1 73.6 67.3 71.0 74.4	12.1 16.1 25.1 31.9 27.8 23.0	0.2	0.1 0.1 0.2 - 0.1	0.2	0.4 0.3 0.2 0.1 0.2 0.4	1.3 1.2 0.6 0.7 0.8 1.9	45.8 39.6 37.5 32.8 33.9 45.0	40.1 42.5 36.1 34.5 37.1 29.4	47.2 41.0 36.2 33.5 34.9 47.1	0.7 0.6 0.7 0.1 0.4 0.7		-		- Control of the cont
	6Ala	<del> </del>	<u> </u>	<u> </u>			L	Bulk densit	<u> </u>	401		ater conte	nt	401	i T	pH	<u> </u>
Depth (In.)	Organic carbon &	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	as Fe		4Ale ⅓ bar	4A1h Oven dry	COLE		481c	4B2 15 bar	WRD		8CIc (1:1) KCI	8C1a (1:1) 8. H <sub>2</sub> O
0-6 6-12 12-17 17-25 25-36	0.73 0.36 0.24 0.22 0.12	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pet.				5.4 5.4 5.2 5.0

Soil Type: Alford silt loam

Soil No.: 850Ill-51-1

Location: Lewrence County, Illinois. T3N., RllW., Sec. 18, SE 1/4, NW 40.

Vegetation and land use: Pasture

Slope and land form: 3 percent on ridgetop.

Sampled by and date: J. B. Fehrenbacher and A. A. Klingebiel. June 7, 1960.

Horizon and **Beltsville** Lab. No.

0 to 6 inches. Dark brown to brown (10TR 4/3 - 5/3) friable silt loam, soft fine crumb. 501297

**A2** 6 to 12 inches. Yellowish brown to dark yellowish brown (10YR 5/4 - 4/4) friable silt loam.

501298 firm crumb to weak granular.

12 to 17 inches. Dark yellowish brown (lOYR 4/4) firm silty clay loam, fine subangular blocky 501299 (horizontal and vertical cleavage equal) structure. Very faint light yellowish brown (10YR

6/4) coatings.

17 to 25 inches. Dark yellowish brown and dark brown (10YR 4/4 - 7.5YR 4/4) firm to very 501300 slightly sticky silty clay loam (slightly heavier than B1). Predominantly medium subangular

blocky with 1/3 of aggregates nut-like. A few very dark gray (10YR 3/1) coatings in spots.

25 to 36 inches. Dark yellowish brown and yellowish brown (10YR 4/4 - 10YR 5/4) firm silty 501301 clay loam, thick platy structure with some weak blocky aggregates 1/2 inch to 1 1/2 inch. A few dark grayish brown (10YR 4/2) coatings in spots.

36 to 42 inches plus. Yellowish brown and dark yellowish brown (10YR 5/4 - 10YR 4/4) friable

501302 heavy silt loam, nearly massive. A few pale brown (10YR 6/3) coatings in streaks.

Notes: Colors determined on moist samples in the field.

SOIL Allison silty clay loam SOIL Nos. \$63Ill-30-1 LOCATION Gallatin County, Illinois SOIL SURVEY LABORATORY \_\_ Lincoln, Nebraska \_\_ LAB. Nos. \_\_\_ 19283-19289 May 16, 1966 General Methods: 1A, 1B1b, 2A1, 2B Size class and particle diameter (mm) & Total Sand Coarse fragments 2A2 Silt Very Fine Very fine Sand Medium Int. III Depth Horizon Clay Coarse Int 13 2 - 19 19-76 coarse (2-1) (0.5-0.25) (0.25-0.1) (0.1-0.05) (0.05-0.02) (0.02-0.02) (In.) (2-0.05)(0.05-0.002) < 0.002) (1-0.5)Pct, of \_ of ≺ 2 mm Pct. < 76mm 43.7 36.6 0-8 59·3 62.6 40.2 17.0 30.9 15.6 ₽ A3 0.5 0.1 0.1 0.3 0.2 5.2 4.7 8-17 32.2 0.1 0.1 \_ 0.3 26.0 0.5 17-27 4.9 37.3 41.1 44.5 45.5 46.0 64.3 27.0 21.7 17.3 30.3 32.1 23.8 18.0 B21 5.4 0.1 0.1 0.3 0.5 27-35 35-50 62.8 R22 2.4 34.8 1.9 0.1 0.1 0.3 0.5 B23 61.8 0.9 37.3 0.1 \_ 0.2 0.3 16.1 50-60 B24 60.9 38.2 0.9 15.4 60-70+ 60.0 0.1 RC. 39.0 0.2 0.6 0.1 0.4 6Ala 6Bla 6E2a 602a Bulk density Water content 4 D1 ьH 4Ald 4B4 4Blc 4B2 4A1b 8cla Ext. LΔla 4C1 Organic Nitrogen Carbonete Field 1/3-State Bar Field COLE 15-Bar 1/3-to (In.) carbon Tron 1/3-Airas CaCO<sub>3</sub> (1:1) <u>a, b</u> as Fe State Bar Dry a Pct. Pct. Pet Pct. Pct 1.54 0-8 1.63 0.152 וו ~(s) 2.1 1.68 1.71 0.036 11.9 22.9 15.0 7.1 7.0 0.12 1.56 1.54 0.032 13.0 24.9 0.032 13.7 25.2 0.036 13.1 25.4 0.130 0.115 8-17 1,34 1.8 10 1.59 1.58 | 13.9 | 0.**1**6 1.44 17-27 1.16 12.5 14.8 0.0 0.18 6.9 1.58 1.44 27-35 1.15 0.126 2.0 1.60 0.15 6.7 1.64 0.044 16.4 35-50 1.44 0.98 2.1 1.58 25.2 15.8 0.14 6.6 0.036 16.2 24.5 0.044 20.1 25.7 1.48 1.64 50-60 0.70 2.2 1.60 16.9 60-70+ 0.69 1.54 2.2 1.44 17.4 0.12 6.7 Extractable bases a 5Bla 6H2a Ost. Exch. Osp. a 8D3 Base saturation 6N2a 602a 6P2a Ext. 5A3a 5A1a KC1-Acidity Sum NH<sub>4</sub>OAc Ext. 5CI NH<sub>4</sub>OAc 5¢3 Depth Ca/Mg Sum (In.) Mg Stam Cations Al Cations a 26.5 24.5 3.8 7.0 0-8 18.8 0.2 0.5 30.3 25.7 2.7 87 103 3.9 4.1 8-17 18.1 5.8 0.2 0.4 28.4 24.0 3.1 3.1 3.0 86 102 98 96 84 26.1 17-27 16.3 5.2 0.2 0.3 22.0 22.5 84 27-35 18.1 29.3 84 0.2 24.9 25.8 25.8 35-50 17.5 6.8 0.2 0.4 4.8 29.7 29.7 2.6 84 50-60 60-70+ 18.o 0.4 4.7 <u>30.5</u> 29.3 28.0 2.5 88 0.2 17.8 Ratios to Clay 8D1 a. Determined by Soil Survey Laboratory - Riverside, California. Depth NH) OAC Ext. Water b. 25 kg/m<sup>2</sup> to 60 inches. (Method 6A) (ln.) CEC Iron at 15-Bar 8-0 0.64 0.05 0.37 8-17 0.74 0.06 0.43 17-27 0.74 0.06 0.41 27-35 0.74 0.06 0.42 35-50 0.80 0.06 0.42 50-60 0.76 0.06 0.44 60-70+ 0.72 0.06 0.45

Soil type: Allison Silty Clay Loam

Soil Nos.; S63 Ill-30-1

Location: Gallatin County, Illinois, T8S, R10E, Sec. 25, NE 160, SE 40, NW 10, SW 21. About 300 feet south of field road, directly south of old house site, and about 480 feet west of field road along break to lower area. About 1 mile southeast from present bank of Wabash River and one mile west of Ohio River junction.

Vegetation and use: Cropland Slope and land form: Level to nearly level; Wabash River valley floor.

Drainage and permeability: Well drained; moderately permeable.

Parent material: Alluvium

Described and sampled by: G. O. Walker, H. L. Wascher, D. L. Wallace, R. E. Bourland, F. N. Carroll, E. Lutz, October 25, 1963.

Horizon and Lab. Nos.

0-8 inches, very dark grayish brown (10YR 3/2) silty clay loam; cloddy breaking to weak fine and medium LSL 19283 granular structure; firm; pH 7.0; abrupt smooth boundary.

UIL 19403

8-17 inches, very dark grayish brown (10YR 3/2) silty clay loam; weak, medium and fine subangular blocky LSL 19284 structure; firm; continuous very dark gray (10YR 3/1.5) coatings; abundant roots; pH 7.0; diffuse smooth

UIL 19404

17-27 inches, very dark grayish brown (10YR 3/2.5) silty clay loam; weak medium and coarse subangular LSL 19285 blocky structure tending toward prismatic; firm; very dark grayish brown (10YR 3/2) coatings and worm

UIL 19405 casts; pH 7.0; diffuse smooth boundary.

27-35 inches, same as horizon above; separated for sampling purposes.

UIL 19406

LSL 19286

LSL 19287

35-50 inches, dark brown (10YR 3.5/3) silty clay loam; weak coarse and medium subangular blocky structure tending toward prismatic; firm; dark grayish brown (10YR 3.5/2) coatings; pH 7.0; diffuse smooth boundary. UIL 19407

50-60 inches, brown (10YR 4/3) silty clay loam; weak coarse prismatic structure breaking to weak medium LSL 19288 subangular blocks; firm; some dark brown (10YR 3.5/2.5) coatings; pH 7.0; diffuse smooth boundary.

UIL 19408

60-70 inches, brown (10YR 4/3) silty clay loam: very weak coarse prismatic structure breaking to very

LSL 19289 weak subangular blocky structure: firm: few dark brown (10YR 3.5/2.5) coatings: nH 7.0,

**UIL 19409** 

Remarks: A compact "plow pan" is present at a depth of 5 to 8 inches. A deep boring to a depth of 11 feet showed silty clay loam from 70 to 90 inches: silt loam from 90 to 120 inches: and fine sand at a denth of 120 inches.

Colors given are for moist soil. Reaction determined by Truog soil test kit.

SOIL Alvin fine sandy loam

SOIL Nos. 854111-2-4 LOCATION Alexander County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. \_\_\_

54938 - 54946

		161b							ss and parti			1						
	İ	<u> </u>	Total					Sand		Si	t	I			3B2		rse fragme	ents 31
Depth (in.)	Horizon	Sand (2-0.05)	\$ift (0.05 0.002)	Clay (= 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25–0.1	Very fine (0.1–0.05)	0.05-0.02	Int. III (0.02 0.002)	Int, <u>11</u> (0.2–0.02)	(2-0.1)		Cm	2A2 >- 2		i ct. of
	ļ					Pc	t. of < 2	mm							ŀ	Pct.		76mm
0-6	Al	ľ	39.7	6.8	0.2	1.3	0.8	20.7	30.5		14.5	74.1				-		
6-13	A2		38.5	10.2	<del>-</del> -	0.8	0.5	18.6	31.4		16.5	70.6			ł	-	1	
13-19	B1	<u> </u>	26.3	22,5	0,1	0.4	0.3	16.8	33.6		10.4	65.1			<del>                                     </del>		<del> </del>	<del> </del>
19-24	B21 B22	ł	23.2	26.0	-	0.2	0.2	12.8	37.6		8.6	64.2			1	-		1
24-30		ļ	34.2	24.2	-	0.1	0.2	7.3	34.0		13.0	62.1		1		-	1	
30-35	B23 B24	<del>-</del>	39.6	19.3	-	<u> </u>	0.1	9,2	31.8		13.0	67.2				-	1	₩
35-41 41-48	C1		19.8	16.9	-	0.1	0.1	30.0	33.2		7.3	74.7		1		! -		
48-55	CS CT		5.1 2.1	4.5	-		1.0	65.2	24.1		2.8	77.7		l		-		
		┼		8.7	-	-	0.7	78.9	9.6		1.8	69.0		-	-	-		<del>↓</del>
55-64	C3		1.5	3.0	-	0.5	1.4	82.6	11.0		1.1	75.6				-	]	1
55-64	C3		2.0	7.3	-	-	0.6	79.6	10.5		1.3	72.8		i	]	-	l	1
	6Ala							Bulk densit	у.	4D1	W	ater conte	nt		4C1		рН	_
Depth	Organic	Nitrogen	C/N		Carbonate	Ext. iron		4Ale	4Alh			4B1c	4B2				8CIc	80
(ln.)	carbon				as CaCO <sub>3</sub>	as Fe		⅓ bar	Oven dry	COLE		⅓ bar	15 bar		WRD		(1:1)	(1::
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/ia		KCI	Н2
0-6	0.22																	7.
6-13	0.18						l								1			7.
13-19	0.14						<u> </u>											6.
19-24	0.15						1		1									5.
24-30	0.09	l i		li												i		ļ <b>4</b> .
30-35 35-41	0.06	$\vdash$							<b>├</b>							<b></b>	<del> </del>	4.
35-41 41-48	0.07															Ì		4.
41-40 48-55	0.04								[ [					ı			1	4.
40-55	0.04						-											4.
		E-t-t-t-b	le bases 5	B1a		<u></u>	CI	· · · · · · · · · · · · · · · · · · ·	6G14				atios to cla	<u> </u>	803		Base sat	uratio.
		$\Box$		T		6HLa	.'' ا		1 2010			- *	erios to Cla	<del>,</del>	803			Г
Depth	6N2d	602b	6P2#	6Q2a		Ext.	L					ا ۔۔۔ ا		١	l i		503	5C
(ln.)	Ca	Mg	Na	ĸ	Şum	acidity	5A3e Sum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum	NH4
	I				արտու/100-ա Մատու/100-ա		Cations		, ,			1		ı	i	l	Carrons	l Pc

Soil Type: Alvin fine sandy loam.

Soil No.: 854Ill-2-4

Horizon and

54946

Location: Alexander County, Illinois. T.15 S., R.2 W., Sec. 35, SE 1/4, SW 40, SW 10, 26 rods north of center of road and 11 rods east from half line in cultivated field.

Vegetation and land use: Cornstalks.

Slope and land form: 6 percent.
Sampled by and date: H. L. Wascher, J. D. Alexander, E. J. Pedersen, L. J. Bartelli. October 29, 1954.

Lab. No.	
A1 54938	0 to 6 inches. Dark brown (10YR 4/3), fine sandy loam, fine crumb to structureless.
A2 54939	6 to 13 inches. Brown (10TR 4.5/3), fine to very fine sandy loam, breaks into 1/4 inch irregular angular crumbs.
B1 54940	13 to 19 inches. Dark yellowish brown (9YR 4.5/4), fine sandy clay loam, breaks into 1/4 inch irregular angular fragments.
B21 54941	19 to 24 inches. Brown to reddish brown (6YR 4/4), clay loam, breaks into 3/4-1 inch irregular angular blocky aggregates, thinly coated with reddish brown (5YR 4/4).
B22 54942	24 to 30 inches. Brown to dark brown (7.5 TR 4/4), clay loam, breaks into 3/4-1 inch irregular angular blocky aggregates, thinly coated with dark yellowish brown (10 TR 3/4) silica flour.
B23 54943	30 to 35 inches. Brown to dark brown (7.5YR 4/4), clay loam, breaks into 1-1 1/4 inch irregular angular vertical elongated aggregates up to 3 inches in length, thinly coated with yellowish brown (10YR 5/4) silica flour.
B2կ 5կ9կկ	35 to 41 inches. Dark yellowish brown (10YR 4/4), fine sandy clay loam, breaks into 1-2 inches irregular angular aggregates and fragments. Corn roots penetrate into this horizon.

41 to 48 inches. Dark yellowish brown (10YR 4/4), loamy fine sand, single grain. 54945 48 to 55 inches. Dark brown (7.5YR 3/4), fine sandy loam, very lightly cemented with iron, C2

C3 55 to 64 inches. Pale brown (10YR 6/3), loose fine sand. This horizon has 3 layers of gray

sand interspersed with 2 iron bands, sampled separately. 55 to 64 inches. Dark brown (7.5YR 3/4), fine sandy loam, iron bands. C3

very slightly compact. hard when dry.

Notes: All colors from moist samples.

SOIL Alvin fine sendy loam SOIL Nos. S54II1-30-9 LOCATION Gallatin County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. <u>54984</u> - 54993

Danth	1		Total							0.1	10	, ,	ı					
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05– 0.002)	Clay ( = 0.002	Very coarse (2-1)	1	Medium (0.5–0.25)	J	Very fine (0.1-0.05)	0.05-0.02	Int. III	Int. II (0.2–0.02)	(2-0.1)		3B2 Cm	2A2 >> 2	2 - 19	19- ct. of _ 76mm
0-9 9-17	Ap A2		49.3 42.7	6.5 8.9	0.1	0.2	0.7	19.8	23.4 23.2		18.7 19.4	71.1 67.9						/Gmm_
17-22 22-29 29-38 38-43	B1 B21 B22 B23	<u> </u>	29.8 16.1 8.2 8.9	14.8 17.9 16.0	-	0.1 0.1	0.8 1.2 1.7 1.4	30.8 38.4 40.4 37.3	23.8 26.4 33.6 40.9	, <b></b>	7.5 3.6	66.3 67.7 72.6 79.7		-		-		
43-48 48-62 62-78	B3 C1 C2		17.5 18.5 6.8	8.9 7.2 3.7	-	0.1	0.9 0.6 1.9	22.4 27.1 42.4	50.2 46.6 45.1		3.8 3.5 1.6	84.1 86.0 86.9				-		
78-100	<b>c</b> 3		12.6	1.4	-	-	0.8	35.2	50.0		2.1	92,1				-		
	6Ala	Ī						Belk densit	<del>i                                    </del>	4D1	V	ater conte			4C1		pН	
Depth (In.)	Organic carbon	Nitrogen	C/N	;	Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe		4Ale ⅓ bar	4A1h Oven dry	COLE		4B1c ⅓sbar	482 15 bar		WRD		8CIc (1:1)	8C1 (1:1
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	H <sub>2</sub> 0
0-9 9-17 17-22	0.56 0.21 0.17						l.											6. 5. 5.
22-29 29-38 38-43	0.17 0.16 0.17																	6. 6.
43-48 48-62 62-78	0.12 0.12 0.07																	6. 6.
78-100	0.10																	8.
		Extractab	le bases 5	Bla		6HLa	¢	EC	6GId			R	atios to cla	sy	803		Base sat	uration
Depth (In.)	6N2d Ça	602b Mg	6P2a Na	6Q2∎ K	Sum meq/100 g	Ext. acidity	5A3a Sum cations		Ext. Al			CEG Sum	Ext. Iron	15-bar water	Ca/Mg		5C3 Sum cations Pct.	501 NH <sub>4</sub> 0 Pct.
0-9 9-17 17-22	4.1 2.1 5.4	0.5 1.7 1.7	tr. tr. tr.	0.1 0.1 0.2		2.3 3.6 0.9	7.0 7.5 8.2										67 52 89	
22-29 29-38 38-43	6.9 5.9 4.1	1.1 0.7 0.4	ម្ភ មិន មិន្តិ	0.2 0.2 0.1		3.2 3.0 2.7	11.4 9.8 7.4										72 69 64	
43-48 48-62 62-78	2.9 2.1 1.5	1.6 1.4 0.3	tr. tr.	0.1 0.1 tr.		2.7 2.9 1.9	7.3 6.5 3.7										63 55 49	
78-100	a		_															
		······································		Clay Fract	on Analysis	7Alb-d			т									
Depth (In.)	Mt.	Çhl.	Vm,	Mi.	Int.	Qtz.	KI.	Gibbsite										
	4	-  -	7A2 —— X-rag			-	7	 A3 <u>►</u>							chlorite, Vr . = quartz,			= miça

tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

a Not determined, sample is calcareous.

Soil Type: Alvin fine sandy loam.

Soil Wo.: S54111-30-9

Location: Gellatin County, Illinois. T.9 S., R.9 E., Sec. 5, SE 1/h, SW 40, SW 10, 33 rods north from section line (or road corner) and 5 rods east from center of gravel road.

Slope and land form: 1 1/2 percent.

Sampled by and date: H. L. Wascher, J. B. Fehrenbacher, J. K. Ableiter. November 16, 1954.

Horizon and Beltsville Lab. Nos.

0 to 9 inches. Brown to dark brown (10YR 4/3) fine to very fine sandy loam, weakly coherent, Ар 54984 breaks into irregular fragments, few lumps of A2 material, few corn roots.

9 to 17 inches. Brown (7.5YR 4.5/4) with a few very dark brown (10YR 2/2) iron-manganese 54985 specks, fine to very fine sandy losm, breaks into irregular fragments, some iron-manganese stains follow root channels, few corn roots, few worm channels some of which are filled with Ap material.

17 to 22 inches. Brown to dark brown (7.5YR 4/4) with small amount of yellowish brown (10YR 5/4) mottles, slightly coherent, very weak 1 - 1 1/4 inch subangular blocky, fine sandy loam 54986 to loam, very light coatings of yellow silica flour - some corn roots, few small wormholes, numerous very small vesicles or worm channels.

B21 22 to 29 inches. Brown to dark brown (7.5YR 4/4) with a little yellowish brown (10YR 5/4) 54987 mottling, also some black (10YR 2/1) iron-manganese specks and stains; borderline clay loam to fine sandy clay losm; weak to very weak 3/4 - 1 1/4 inch subangular blocky, moderately compact, some corn roots and worm channels.

29 to 38 inches. Reddish brown (5YR 4/4) with some yellowish brown (10YR 5.5/4) channel fillings, borderline clay loam to fine sandy clay loam, moderately compact, breaks into irregular 54988 sharp edged fragments to 1 inch subangular blocky, very few fine corn roots, and a few fine worm channels.

38 to 43 inches. Reddish brown (5YR 4/4) (85 percent) and yellowish brown (10YR 5.5/4) (15 54989 percent), fine sandy clay loam, very slightly compact, breaks into irregular sharp edged fragments, very few corn roots and very few fine worm channels.

43 to 48 inches. Brown to dark brown (7.5YR 4/4) (85 percent), yellowish brown (10YR 5.5/4) 54990 (15 percent), fine sandy loam, breaks into very weak soft irregular fragments, no corn roots, some few fine worm channels.

48 to 62 inches. Brown to dark brown (7.5YR 4/4) (60 percent), yellowish brown (10YR 5.5/4) (40 percent), fine sandy loam, very slightly coherent, massive, appears to be banded in lower 54991 part, very few wormholes.

62 to 78 inches. Yellowish brown (10YR 5.5/4) loamy fine sand, single grain, loose. Sampled C2 54992 from 68-75 inches. No sample taken from 62-68 inches.

78 to 100 inches. Light yellowish brown (10YR 6/4), fine sand, single grain, loose, 54993 cal careous.

Notes: Calcareous silt and fine sand at 100 inches.

SOIL Alvin fine sendy losm

SOIL Nos. 854111-38-8 LOCATION Troquois County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

\_ LAB. Nos. 54973 - 54983

	1	1B1b						Size clas	s and parti	cle diamet	er (mm) 3A	1						
	1		Total					Sand		Si		<u> </u>			382	Coa	ise fragme	ints ?
De-t*	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. 🎞	İ		1	2A2	T	П
Depth (In.)	Morizon	(2-0.05)	(0.05_	1 - 0 002	coarse					0.05_0.00			(2-0.1)	1	Cm	<b>&gt;-</b> 2	2 ~ 19	19
(111.)		(2-0.00)	0.002)	( 4 0.002)	(2-1)	11-0.5	(0.5-0.25)	(0.23-0.1)	(0.1-0.05)	0.03-0.02	0.002)	(0.2-0.02)	(2-0.1)	1	Um		PG	it. of
	-	<del> </del>	1 - 2 - 2		-		t. of =< 2				T	-0.0		<u> </u>		Pct.	- < :	76mn
0-4	A1	1	30.7	7.2	0.3	2.0	6.8	25.9	27.1		15.4	58.8	ļ	ŀ		=		i i
4-14	A2 A3		34.7 35.0	6.4 8.5	0.2	1.3	5.0	23.6	28.8 27.5		17.9 17.8	61.0	ł	ŀ		l -	i	
<u>14-19</u> 19-24	BI	<del>                                     </del>	28.2	10.5	0.2	1.0	4.7	25.9	29.5		13.9	61.1	-	<del>                                     </del>	<del> </del>	<u> </u>	<del>                                     </del>	H
24-32	B21		18,1	13.8	0.1	1.1	6.0	32.0	28.9		7.9	59.7				ΙĪ		1
32-40	B22		10.7	17.1	0.1	1.5	8.2	35.1	27.3		3.3	56.2				-		ı
10-47	B23	T	7.5	12.7	2.9	7-3	19.5	37.1	13.0		3.5	31.9				8		Т
¥7-53	B3	Į	5.6	14.3	8.2	21.5	26.3	21.3	2.8		3.5	10.7	!			19	i	ı
53-59	C1	1	4.4	9.5	6.9	20.1	32.7	25.0	1.4		3.0	7.8				55		Ļ
59-75	C2	i	0.9	4.6	1.5	11.2	39.2	41.5	1.1		0.6	13.4		"	[	tr.		
75-80+	C3	1	0.9	2.3	1.4	13.2	51.6	28.8	1.8		0.5	11.4	ŀ			tr.	İ	1
		1			1			Bulk densit	у .		W	eter conte	nt				pH	
Depth	6Ala Organic	Nitrogen	C/N	ļ	Carbonate	Ext. iron	<u> </u>	4Ale	4Alh	401		4B1c	4B2		4C1		8Cic	80
(in.)	carbon		, ···	}	as CaCO <sub>3</sub>		1			COLE					WRD			"
	1					1	1	>≰ bar	Oven dry	VULE	1	⅓ bar	15 bar		WKD		(1:1)	(1
	1	١.,.			<b>.</b> .	l <u>.</u> .	Ι.	l .	1		l	١	l		in/in		KCI	н
0.1	Pct.	Pet.	<u> </u>	<b></b>	Pct.	Pct.	g/cc	g/cc	E/CC		Pçt,	Pct.	Pct.	<u> </u>		<u> </u>	<u> </u>	_
0-4 h-1k	2.35						1	ļ				1	ŀ			1	1	6
4-14 14-19	0.32						1				1	1	ŀ			]	•	5
19-24	0.10	+			<u> </u>	† · · · ·	<u> </u>	<del>                                     </del>				ļ	ļ		<del>                                     </del>	<del> </del>	<del> </del>	5
24-32	0.10			{											1			5
2-40	0.12	1			1		1	ļ										5
10-47	0.07																	5
+7-5 <b>3</b>	0.09	1				1			i									5
53-59	0.06	<u> </u>	ļ.,,	L	<u> </u>	<u> </u>	ļ	ļ	ļ						<u> </u>			5
59-75	0.06						1											5
75-80+	0.06				<b> </b>	1	1											6
		Extractab	le bases 5	Bla		6ELa	C	EC	6G1d			F	atios to cia	y	803		Base sat	uratio
	6N2d	602b	6P2a	6Q2a		Ext.									1	l	5C3	5
Depth (In.)	1			l -		1	5A3a	<u> </u>	Ext.		l	CEC	Ext.	15-bar	Ca/Mg		303	ľ
(,,,,,	Ca	Mg	Na	K	Sum -	acidity	Sum		, Al		ĺ	Sum	iron	water	1	l	Sum	NH4
		1		ı		!	cations	1	!		l						cations Pct	P
0-4	7.7	2.8	tr.	0.1	meg/100 j	5.3	15.9	<del> </del>			<b>—</b>						67	F-
4-14	1.4	0.5	tr.	tr.		4.0	5.9				· .							
14-19	1.9	0.8	tr.	tr.		6.8	9.5	l			l	· '					32 26	l
19-24	2.7	1.4	tr.	ŏ.i	<del> </del>	5.9	16,1	<b></b> -	<b>†</b>		<b></b>						142	t
24-32	4.1	2.0	0.1	0.1	1	4.8	11.1	l	j	}	l					1	57	l
2-40	6.0	2.9	0.1	0.2	L	5.5	14.7		L						L		62	↓_
0-47	4.4	2.2	0.1	0.2		3.8	10.7				l						64	1
7-53	3.9	1.9	0.1	0,1		3.5	9.5				i					l	63	1
53-59	2.5	1.2	tr.	tr.	<del>                                     </del>	10.8	14.5		ļ	L	<del> </del>	ļ <sub>.</sub>		<b></b>	-	-	26	$\vdash$
59-75 75 <b>-80</b> +	0.9	0.5	tr. tr.	0.3		2.3	3.2	1				[			1	ľ	49 47	l
			ur.			1.1	3.6		L									L
_	1			Clay Fract	ion Analysi	is 7Alb-d												
Depth	Mt.	C-1	N-			T	٣.	61b	1									
(in.)	Mrt.	Çhi.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
	1			l		1	1	1										
	L	<u> </u>	7A2		l 	1	۶ ــــ ۶	1 A3 ———	J			Mt N	Aontmorillor	nite, Chl. =	chlorite, V	m. – Verm	iculite, mi	= mi
		1		<u>, — </u>		T -	<del>- '</del>								z quartz,			
	1						1	ł										
	[	-			l		<u> </u>	<u> </u>	1			Relative	amounts:	tjiank — no	t determine oderate, xx	O, GASN == v == abuede	not detecte	dom
		1			Ī		ī					u. = (A	rve, x = 5M	##, xá ≖ M	operate, XX			auti)
		1		l .														
							1		1									
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Soil Type: Alvin fine sandy loam.

Soil No.: 954Ill-38-8 Location: Iroquois County, Illinois. T.27 N., R. 11 W., Sec. 22, NW 1/4, SE 40, SE 10, 20 rods eastnortheast of bridge, or about 9 rods south of center of road and 8 rods west of pasture fence. Vegetation and land use: Bluegrass pasture.

Slope and land form: O percent.

Sampled by and date: M. L. Wascher, J. B. Fehrenbacher, B. W. Ray. November 11, 1954.

Horizon and Beltsville Lab. Nos.

54979

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0 to a inches. Dark gravish brown (1078 3.5/2), fine sandy loss, breaks into weak soft crumbs

4 to 14 inches. Brown (10YR 4/3), fine sandy loam, tending to show very weak thin platy 54974 structure in place, moderate number of fine fibrous roots, often small worm channels. 14 to 19 inches. Bark brown (10YR 4/3), fine sandy loam, breaks into very weak 1/4 inch platy to subangular blocky, very weakly cemented, slightly compact, a few fibrous roots, a few small A3 54975 worm channels. 19 to 24 inches. Brown to dark brown (7.5YR 4/4) (75 percent) yellowish brown (10YR 5/4) (25 percent), a few very dark brown (10YR 2/2) iron stains and concretions, fine sandy loam to 54976 fine sandy clay losm, breaks into irregular weakly developed 1/4 - 1/2 inch subangular blocky aggregates, a few of the aggregates very thinly coated with lighter colored silica flour, a few fibrous roots, a few small worm channels. 24 to 32 inches. Brown to dark brown (7.5YR 4/4) (75 percent) yellowish brown (10YR 5/4) B21 (25 percent), a few very dark brown (10TR 2/2) iron stains and concretions, fine sandy clay 54977 losm borderline to clay losm, breaks into weakly developed 3/4 inch irregular subangular blocky aggregates, a few of the aggregate faces are thinly sprinkled with silica flour very pale brown (IOYR 7/3), a few fibrous roots, a few small worm channels continue through this layer. 32 to 40 inches. Brown to dark brown (7.5TR 4/4) with dark reddish brown (5TR 3/4) coatings, **B22** some very dark brown (10YR 2/2) iron stains, clay loan, breaks into 3/4 - 1 1/2 inch subangular 54978 to angular blocky, a few fine roots, few small worm channels extend into this horizon. **B23** 40 to 47 inches. Brown to dark brown (7.5YR 4/4) and strong brown (7.5YR 5/6) mixed, sandy

loam borderline to sandy clay loam containing some coarse sand and a few small pebbles, breaks

SOIL \_\_Alvin fine sandy loam

SOIL Nos. S54II1-51-5 LOCATION LEWIPERCE County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. <u>54949 - 54955</u>

	1	1B1b			,				ss and parti			1		,				
	1	<b>├</b>	Total	γ	<del> </del>	-		Sand		Si	lt	1			382		rse fragme	nts 3Bi
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05-	Clay	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25	Fine (0.25-0.1	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-	Int, <u>II</u> (0.2–0.02)	(2-0.1)		Cm	2A2 >= 2	2 - 19	19-76
		l_	0.002)	ı	1 (2 -)	ļ Po	! it. of <del>-</del> < 2	l mm	ŀ	I	0.002)	ď.		l		Pct.	P.	t. of 76mm
0-9	Ap		39.2	6.1	-	0.3	1.4	25.3	27.7		16.5	69.1	······································	1	<del>                                     </del>	PCI.	<u> </u>	1 mm
9-18	A2	1	37-5	8.3	-	0.1	1.2	25.6	27.3	İ	16.2	67.5				l -		ļ
18-22	Bl	<u> </u>	36.8	13.8	-	0.1	1.1	23.8	24.4		15.0	63.4		ĺ		-		i
22-30	B21		23.8	19.2	-		1.4	25.2	30.3		8.9	63.3				-	1	
30-37	322	1	21.1	16.9	-	0.2	1.7	24.5	35.6		5.9	68.5				<u> </u>		İ
37-44 44-54	193 C1	+	19.7	12.6	-	0.1	1.4	22.7	35.4		5.3 3.0	73.9 78.8		-	ļ.,	ļ <u> </u>	<b></b>	
/-	-		-2.,		-	0.1		-,	72.7		٠.٠					-		ļ
													•					
	<del>                                     </del>	<del>†                                     </del>		<del> </del>			1	Bulk densit	<u> </u>	l		Vater conte		J	<u>}                                    </u>		L	l
	6Ala			ļ	L		$\vdash$	T		4D1	-			ł	4C1		pH	
Depth (In.)	Organic	Nitrogen	C/N	1	Carbonate as CaCO <sub>n</sub>	Ext. iron		4Ale	4A1h			481c	482				8CIc	8C1a
·····›	1	1		[	>=>4	'-	1	⅓ ber	Oven dry	COLE		≯≤ bar	15 ber	1	WRD		(1:1)	(1:1)
	1	1_			1 _			1							lo (in		Koi	
	Pct	Pct.			Pct.	Pat.	g/cc	E/CC	g/cc		Pct.	Pct.	Pct.		In/in	<b></b>	KCI	H <sub>2</sub> O
0-9 9-18	0.44		ł	ļ	i		1								1	l		6.8
9-10 18-22	0.00			l								!						5.2
22-30	0.08	1						† · · · ·							<del> </del>	<del>                                     </del>	1	5.2 5.0
30-37	0.08			l .			]	l									l	5.4
37-H4	0_06_	<u> </u>		<u> </u>		L	ļ	<u> </u>	<u> </u>						ļ			5.3
44-54	0.05	[ i		1			i		]						1	1		5.6
	ļ																	
	1	Extractab	le bases 5	B1a		6HLa	C	EC .	6 <b>G</b> 1d			R	stios to cla		8D3		Base set	ıration
n	6N2d	602b	6P2a	6Q2a		Ext.	l .	•				T T			1		5C3	
Depth (In.)	i	1				ÇXI.	5A3a		Ext.	' i		CEC	Ext.	15-bar	Ca/Mg		363	5C1
	Ca	Mg	Na	K	Sum	acidity	Sum		Al		ĺ	Sum	iron	water				NH <sub>4</sub> OAc
		!		 	meq/100 g		cations	1	_								cations Pct.	Pct.
0-9	3.3	1.0	tr.	0.1	eq, 100 g	1.5	5.9										74	ru.
9-18	1.6	8.0	tr.	0.1		1.9	4.4	ĺ	li			l					57	
18-22	3.6	1.4	tr.	0,2		2.7	7.9					L I					66	
22-30	5.3	2,1	tr.	0.2		3.8	11.4										67	
30-37 37-44	4.9	1.6	tr.	0.2		3.4	10.4			i							67	
31-44 44-54	3.9 3.1	1.6	tr.	0.1		2.8	8.4 6.9										67 70	
,	"-	-•~	•				7.7					[					10	
	ļ									•								
				Clay Fracti	on Analysis	7Alb-d												
Depth (in.)	Mt.	Chl.	Vm.	Mi.	int,	Qtz.	KI.	Gibbsite										
	l		7A2	'	J													
	-		X-ray				7/	13 <u> </u>							chlorite, Vr			= mica,
	I				ļ							int. — In	terstratified	tayer, Qtz	. == quartz,	KI, = Kaoli	nitë	
					1										determined			
	$\vdash$	$\vdash$				-	$\vdash \neg \vdash$		$\dashv$			tr. = trec	e, x = sma	ill, xx = mo	oderate, xxx	= abunda	nt, xxxx =	dominant
	1	1	1		l													
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					l				[									
	<b> </b>	ļ						-										
			- 1															
	ı	1		<b> </b>	- 1													

Soil type: Alvin fine sandy loam

Soil No.: S54Ill-51-5

Location: Lawrence County, Illinois. T.2N., R.12W., Sec. 26, SE 1/4, NW 40, NE 10, 760 feet east of center of section (center of T junction) on south side of road

Slope: 2 percent

Collected by and date: J. B. Fehrenbacher and party, October 25, 1954

Horizon and Beltsville Lab. Nos.

0 to 9 inches. Dark yellowish brown (10YR 4/3.5) fine sandy loam, single grain. Ap 54949

9 to 18 inches. Yellowish brown (10YR 5/4) fine sandy loam, single grain.

54950

18 to 22 inches. Brown to dark brown (7.5YR 4/4) fine sandy clay loam, weak medium subangular blocky, few very faint light gray (10YR 7/2) coatings.

54951 B21 54952

22 to 30 inches. Yellowish red (5YR 4.5/6) clay loam (fine sand), weak to moderate,

medium to coarse, subangular blocky, few very faint light gray (10YR 7/2) coatings

(more than above).

30 to 37 inches. Reddish brown (5YR 4/4) fine sandy clay loam, very weak coarse B22 54953 subangular blocky, some weak pale brown (10YR 6/3) coatings increasing in amount.

44 to 68 inches. Dark yellowish brown (10YR 4/3.5) mottled with (10%) pale brown 54955 (10YR 6/3) fine sandy loam, single grain.

68+ inches. Calcareous mixed silt sand sands. C2

SOIL Alvin fine sandy loss SOIL Nos. 854111-51-6 LOCATION Lawrence County, Illinois 54956 - 54962 COLL CURVEY LABORATORY Beltsville, Maryland IAD Nos

IL SURVE	Y LABORATO	RY <u>Be</u>	Itsville,	Marylan	ia					I.AE	. Nos	7477	6 - 54	-902				-
	1	1B16							s and partic			1						
		<u> </u>	Total	T	<u> </u>	_	1	Sand		Si					382	Coa 2A2	rse fragme	nts 3B
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05-	Clay ( < 0.002)	Very coarse (2-1)	(1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-	Int. II (0.2-0.02)	(2-0.1)		Cm	<b>&gt;</b> 2	2 - 19	19~7
••		<u> </u>	0.002)	l'	(2-1)	Pc	l t. of <del>&lt;</del> < 2		<u> </u>		0.002)					Pct.		t. of 6mm
0-6	A1		17.8	8.1	-	0.3	5.6	61.9 54.4	9.8		9.5	51.8 50.8				-	<u> </u>	
6-17 17-25	A2 B21		23.8	21.4	_	-	3.5	51.0	10.0 9.6		13.9 9.2	48.3				Ξ		
25-33	322		6.4	15.6	-	-	1.4	63.8	12.8		3.6	59.9				-		
33-40 40-48	B31 B32		3.6	11.6 13.0	-	0,1	2.9 4.1	69.9 67.4	12.0 11.7		2.3	56.1 51.7				<u>-</u>		
¥868	cī.		1.9	5.0	-	-	4.0	76.1	13.0		1.2	58.5				-		
_																		
	<del>†</del>	_	<u> </u>	<del>†</del>		<del></del>		Bulk densit	y	401	V	fater conte	nt		401		рН	
Depth	6Ala Organic	Nitrogen	C/N		Carbonate	Ext. iron		4Ale	4A1h	4D1		481c	4B2		4C1		8Clc	8C1a
(ln.)	carbon				as CaCO <sub>3</sub>	as Fe		3⁄5 ber	Oven dry	COLE		¾ ber	15 ber		WRD		(1:1)	(1:1)
	Pct.	Pct.		<u></u>	Pct.	Pct.	g/ec	g/cc	g/cc		Pct.	Pct.	Pct.		in/in	ļ	KCI	H <sub>2</sub> O
0-6 6-17 17-25	0.36 0.05 0.12													}				6,2 6,2 5,6
25-33 33-40	0.05																	5.2 5.4
<del>40-48</del>	0.05	<u> </u>		ļ	<u> </u>		ļ	<u> </u>				ļ					ļ	5.2
48-60 	0.03																	5.4
								<u> </u>										
		Extractal	ble bases	5B1#		6на	C	EC	6G1d			<u> </u>	atios to cla	iy T	803		Sase sat	
Depth	6N2d	602b	6P2a	6Q2a		Ext.	5A3a	1	Ext.			CEC	Ext.	15-bar	Ca/Mg		5C3	5C1
(ln.)	Co	Mg	Na	K	\$um meq/100 (	acidity	Sum cations	<u> </u>	Al			Sum	iron	water			Sum cations Pct.	NH <sub>4</sub> OA
0-6	1.5	0.4	tr.	0.1	T	3.0	5.0										40 48	
6-17 17-25	1.5 5.7	2.6	₩. 0.1	tar. 0.3		2.3	13.8		i						İ	l	63	l
25-33	3.2	0.9	tr.	0.2	,	4.8	9.1										47	
33-40 40-48	2.5 2.3	0.9	tr.	0.2		4.4	8.8					]					50 42	
48-68	0.9	0.8	tr.	0.1		3.2	5.0										36	
						_							-					
		<u> </u>		Clay Frac	tion Analysi	is 7Alb-d						<u> </u>	<u> </u>		<b>_</b>	<u> </u>		
Depth (in.)	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite		i i								
		<u> </u>	7A —— X-r		<u> </u>		,	A3							- chlorite, V			≕ mica,
												Relative	amounts:	blank = no	z. ≃ quartz, ot determine	ed, dash =	not detect	ed,
	<del>                                     </del>			1					<del>                                     </del>			tr. — tra	ece, x = SM	sail, xx = m	ioderate, xx	x = abund	ant, xxxx =	domina
		-																

Soil type: Alvin fine sandy loam

Soil Nos.: S54Ill-51-6

Location: Lewrence County, Illinois. T.2N., R.12W., Sec. 12, SE 1/4, SW 40, SW 10, 323 feet north of south section line (center of T road junction on east side of Rt. 1).

Slope: 4 to 5 percent.

Collected by and date: J. B. Fehrenbacher and party, October 26. 1954.

Horizon and **Beltsville** Lab. Nos.

0 to 6 inches. Dark yellowish brown (10XR 3/4) light fine sandy loam, single grain.

54956

40 6 to 17 inches. Strong brown (7.5YR 4/5) fine sandy loem, single grain.

54957

B21 17 to 25 inches. Yellowish red (5YR 4.5/8) fine sandy clay, moderate medium subangular

54958 blocky.

B22 25 to 33 inches. Strong brown (7.5YR 4.5/6) fine sandy clay loam, weak medium subangular

54959 blocky.

33 to 40 inches. Yellowish brown (10YR 5/4) (75%) with lenses of yellowish red (5YR 4/5) (25%), loam, very weak medium subangular blocky.

54960

40 to 48 inches. Yellowish brown (10YR 5/4) (50%) with lenses of strong brown (7.5YR 4/5) (50%) fine sandy clay loam, very weak medium subangular blocky. 54961

48 to 68 inches. Yellowish brown (10YR 5/4) fine sand with lenses of dark reddish brown

C1 54962 (5YR 3/4) fine sandy loam, single grain.

68 to 90+ inches. Yellowish brown (10YR 5/4) fine sand, single grain.

Not sampled

SOIL Alvin fine sandy losm SOIL Nos. 854111-63-3 LOCATION Mason County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 54928- 54937

		181b	7-4-1				Size class and particle diameter (mm) 3A1					1		r					
			Total	1	<b>.</b>			Şənd		Sil	·				3B2	2A2	rse fragme	ents 3	
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05– 0.002)	Clay ( = 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medlum (0.50.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)	0.05-0.02	Int. III (0.02– 0.002)	int. II (0.2–0.02)	(2-0.1)		Cm	<b>&gt;</b> 2	2 - 19	19- ct. of	
				!			. of << 2									Pct.		76mm	
0-1	Al		29.5	6.3	0.9	2.4	15.8	41.3	3.8		15.7	32.3				-	i	1	
1-9 9-18	A21 A22		22.5 24.0	5.2 4.7	0.1	0.9	17.1 17.6	50.4 49.1	3.8	ľ	12.5	30.9		1		-	i	1	
8-26	Bl		25.6	6.5	0.1	1.4	17.1	46.0	3.5 3.2		13.7 15.6	31.2 29.2		-	<del>                                     </del>	-	<b>-</b>	╁	
6-33	B21		29.0	13.9	"-	0.7	14.6	38.9	2.9		17.7	28.0		1	l	[	1		
3-40	B22		26.9	20.0	-	0.7	14.0	35.7	2.7		17.5	24.3			İ	l 🖫	l		
0-48	B3		12,6	15.3	-	0.8	19.3	48.9	3.1		7.7	25.5				_	†	T	
8-54	Ci	l	2.1	6.5	-	0.8	20.3	66.5	3.8		2.0	28.1			ŀ	-	ł	1	
4-60	C2		4.0	4.2	-	0.7	19.3	67.2	4.6		2.0	32.4					<u>l</u>		
0-65	C3		8.5	9.7	-	0.9	18.0	57.1	5.8		3.4	32.8				-			
				ļ				<u> </u>									<u> </u>		
	6A1a	ł						Butk density		4D1	W	fater conte			4C1	_	pH	Ι.	
Depth (in.)	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>q</sub>	Ext. iron as Fe		4A1e	4A1h			481c	4B2			ļ.	8Clc	81	
(111.)	Carbon			Į	as cacog	as re		⅓ bar	Oven dry	COLE		⅓ bar	15 ber		WRD	ļ	(1:1)	(1	
		<b></b>		ļ				l . I							in/in		KCI	н	
0-1	Pct. 3.49	Pct.		-	Pct,	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.					5	
1-9	1.10																	4	
9-18	0.63	1						j										4	
8-26	0.19																	5	
6-33	0.16																	5	
3-40	0.16			ļ														1	
0-48	~~~			1				1								,		5	
8-54	0.02			Ì												1		5	
54-60 60-65	0.02							<del>                                     </del>										5	
-																			
		Extractable bases 581a					ÇI	EÇ	6G1d			R	atios to cla	ıy	8D3	<u> </u>	Base sat	turati	
epth	6N2d	602ъ	6P2a	6Q2a		Ext.								1			5C3	5	
(In.)		l		l			5A3a		Ext.			CEC	Ext.	15-bar	Ca/Mg				
·	Ca	Mg	Na	K	Sum	acidity	Sum		Al			Sum	iron	water			Sum	NH,	
		l		<u> </u>	meq/100 <u>g</u>		cations	<b>!</b>						i			Pct.	p	
0-1	3.9	1.6	0.1	0.4	111047.000	9.3	15.3										39	۲	
	0.2	0.4	tr.	0.3		17.0	17.9										<b>7</b> 5	ı	
T-A :	منما	0.4	tr.	0.2	L	17.0	18.2	L								<u> </u>	6	L	
9-18	0.6	0.4															9		
9-18 8-26	0.8	0.4	0.1	0.2		15.4	16.9										33	ļ	
9-18 8-26 6-33	0.8 2.7	0.4	0.1 tr.	0.2		7.2	10.7									l		1	
9-18 8-26 6-33 <b>3-4</b> 0	0.8 2.7 4.7	0.4 0.6 1.9	0.1 tr. 0.1	0.2		7.2 9.1	10.7										43	•	
9-18 8-26 6-33 3-40 0-48	0.8 2.7 4.7 4.7	0.4 0.6 1.9	0.1 tr. 0.1 0.1	0.2 0.2 0.2		7.2 9.1 7.0	10.7 16.0 13.5						·				¥3 ¥8		
9-18 8-26 6-33 3-40 0-48 8-54	0.8 2.7 4.7 4.7 2.2	0.4 0.6 1.9 1.5 0.4	0.1 tr. 0.1 0.1 tr.	0.2 0.2 0.2 0.1		7.2 9.1 7.0 5.3	10.7 16.0 13.5 8.0						·				48 34		
9-18 8-26 6-33 3-40 0-48 8-54 4-60	0.8 2.7 4.7 4.7	0.4 0.6 1.9	0.1 tr. 0.1 0.1	0.2 0.2 0.2		7.2 9.1 7.0	10.7 16.0 13.5										¥3 ¥8		
9-18 8-26 6-33 3-40 0-48 8-54 4-60	0.8 2.7 4.7 4.7 2.2 1.5	0.4 0.6 1.9 1.5 0.4	0.1 tr. 0.1 0.1 tr.	0.2 0.2 0.1 tr.		7.2 9.1 7.0 5.3 5.7	10.7 16.0 13.5 8.0 7.6										48 34 25		
1-9 9-18 8-26 6-33 3-40 0-48 8-54 4-60 0-65	0.8 2.7 4.7 4.7 2.2 1.5 2.9	0.4 0.6 1.9 1.5 0.4 0.4	0.1 tr. 0.1 0.1 tr. tr.	0.2 0.2 0.2 0.1 tr.	ion Analysis	7.2 9.1 7.0 5.3 5.7 5.5	10.7 16.0 13.5 8.0 7.6 9.5										48 34 25		
9-18 8-26 6-33 3-40 0-48 8-54 4-60	0.8 2.7 4.7 4.7 2.2 1.5	0.4 0.6 1.9 1.5 0.4	0.1 tr. 0.1 0.1 tr.	0.2 0.2 0.1 tr. 0.1	ion Analysis Int.	7.2 9.1 7.0 5.3 5.7 5.5	10.7 16.0 13.5 8.0 7.6	Gibbsite									48 34 25		
9-18 8-26 6-33 3-40 0-48 8-54 4-60 0-65	0.8 2.7 4.7 4.7 2.2 1.5 2.9	0.4 0.6 1.9 1.5 0.4 0.4	0.1 tr. 0.1 0.1 tr. tr.	0.2 0.2 0.2 0.1 tr. 0.1		7.2 9.1 7.0 5.3 5.7 5.5	10.7 16.0 13.5 8.0 7.6 9.5					Mt. = N	<b>lontmorillo</b>	nite, Chl. =	chtorite, V	m. = Verm	48 34 25 42	= m	
9-18 8-26 6-33 3-40 0-48 8-54 4-60 0-65	0.8 2.7 4.7 4.7 2.2 1.5 2.9	0.4 0.6 1.9 1.5 0.4 0.4	0.1 tr. 0.1 0.1 tr. tr.	0.2 0.2 0.2 0.1 tr. 0.1		7.2 9.1 7.0 5.3 5.7 5.5	10.7 16.0 13.5 8.0 7.6 9.5	Gibbsite							chtorite, V		43 48 34 25 42	= m	
9-18 8-26 6-33 3-40 0-48 8-54 4-60 0-65	0.8 2.7 4.7 4.7 2.2 1.5 2.9	0.4 0.6 1.9 1.5 0.4 0.4	0.1 tr. 0.1 0.1 tr. tr.	0.2 0.2 0.2 0.1 tr. 0.1		7.2 9.1 7.0 5.3 5.7 5.5	10.7 16.0 13.5 8.0 7.6 9.5					int. — in Relative	nterstratifie amounts:	d layer, Qtz blank — no		KI. — Kao d, dash —	43 48 34 25 42	ed,	

Soil type: Alvin fine sandy loam

Soil No.: S54Ill-63-3

Location: Mason County, Illinois. T. 20 N., R. 7 W., Sec. 30, SE 1/4, SW 40, NW 10, 15 yds. south of center of T-road from west, on east side of road in 10 ft. wide road bank with 15 ft. deep road cut,

under some small hickory-oak trees.

Vegetation: Small oak and hickory trees and weeds.

Slope: 12 percent.

Collected by and date: H. L. Wascher, J. D. Alexander, and E. J. Pedersen, October 29, 1954.

Horizon and Beltsville Lab. Nos.

54928

O to 1 inches. Black (10YR 2/1) fine sandy loam, weak crumb (might possibly be an Ol, if

so there is no Al).

A21 54929 1 to 9 inches. Brown (10YR 5/3) fine sandy loam, structureless, breaks into medium

irregular fragments.

A22 54930 9 to 18 inches. Dark yellowish brown (10YR 3.5/4) fine sandy loam to loamy fine sand, breaks

into irregular angular fragments.

54931

18 to 26 inches. Brown to dark brown (7.5YR 4/4) fine sandy loam to loamy fine sand, very

compact, moderately cemented (dry), breaks into vertical sharp edged fragments.

R23 54932

P22---

26 to 33 inches. Brown to dark brown (7.5YR 4/4) sandy clay loam to clay loam, breaks into irregular 1/2-3/4" subangular blocky aggregates, weakly developed aggregates with very thin grayish coatings, coatings not continuous, on 50 percent of surfaces of aggregates, very

compact.

SOIL Alvin sandy loam

S54I11-78-2 \_ SOIL Nos.

Putnam County, Illinois LOCATION -

SOIL SUBVEY LABORATORY Beltsville, Maryland

LAD No. 54918-54927

		1816						Siza eta	ss and parti	cie diametr	e (mm) 34	1						
		1010	Totat		1			Size cia: Sand	as and parti	cie diamete Sil		•			382	Con	rse fragme	ente
<b>-</b>	l	0-4	000		Very		Markley-	- Files	V F		i	1	İ			2A2	1	T
Depth (In.)	Horizon	\$and	Silt	Clay ( < 0.002	coarse	Coarse (1-0.5)	Medium	Fine	Very fine (0.1-0.05)	0.05.002	Int. III	Int. II (0.2–0.02)	, a a		Cm	> 2	2 - 19	19-
(,)		(2-0.03)	(0.05- 0.002)	0.002	(2-1)	l	i	ł	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.05-0.02	0.002)	KO.2-0.02)	(2-0.1)	ŀ	- Cm		P	ct. of _
^ 2	Al	-	110.0	1 1/ 7	T A E	18.6	1. of < 2 29.0	22.6	1 10 77		10 E	72.7			ļ	Pct.	_ <	76mm
0-3 3-9	A21		19.9	4.7	0.5	18.0	28.1	22.3	4.7 4.8		10.5	23.7 24.2			1	-		
9-14	A22	ł	23.2	4.9	0.5	17.4	27.8	21.6	4.6		12.8	24.3			1		ļ	1
14-18	B1		26.0	8.0	0.4	16.0	25.6	19.7	4.3		15.1	23.9		†	1	-	1	1
18-25	B21	İ	30.8	11.4	0.4	14.6	22.3	16.7	3.8		17.5	24.5		ł	1	-		
25+30	B22		33.9	19.2	0.3	10.5	18,5	14.4	3.2		20.4	22.6				-		
30-35	B23		24.2	20.6	0.1	9.7	21.9	19.5	4.0		14.1	22.6			İ	- "		T
35-44	B24	1	9.7	15.3	0.2	11.4	28.4 36.6	29.0	6.0		5.9	22.7		ļ		-		
<u>44-54</u> 54-62	C5	+	2.9	7.8	0.3	16.7	37.1	33.9 29.8	5.2		1.9	19.9			ļ	<del>  -</del>	<b>├</b> ──	┿
J <del>440</del> 2	162		2.0	'."	0.2	TOP	31.7	29,0	0,4		1-3	19.9				<del>-</del>		
		<u> </u>			<u> </u>			Bulk densit	ty.		W	ater conte	nt	<u> </u>	<u> </u>	<u> </u>	pH	<u> </u>
Depth	6A1a Organic	Nitrogen	C/N		Carbonate	Ext. iron	·	4A1e	4Aln	401		4B1c	482	1	4C1		8Clc	8C1
(in.)	carbon	······································	, v,	ŀ	as CaCO <sub>a</sub>	as Fe			]	COLE					WRD		l	1
		İ			,			3≰ bar	Oven dry	OULE		3≤ ber	15 bar		HAD		(I:1)	(1:1
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	<u>g</u> /cc		Pct.	Pet.	Pct.		in/In		KĊI	H <sub>2</sub> C
0-3	1.44											<u> </u>						6.
3-9 9-14	0.35														1			5.
9-14 14-18	0.22	<del></del>			<del> </del>							<b> </b>						5.
18-25	0.19											•				ŀ	ł	6.
25~30	0.06	1			i				]			ĺ		1		ŀ	]	5. 5.
30-35	0.05	T	·-·									1					1	4.
35-44	0.05	1			'											ŀ		4.4
<u>44~54</u>		<b>.</b>	ļ	<b> </b>			<u> </u>	<u> </u>						ļ		ļ	L.—	541
54-62	-		l .	ļ										•				5-1
		Eutroptob	le bases 5	910				EC .	5G1d				atios to cla	<u>                                     </u>	8D3		Base sat	uration
						6ЕЦа	ľ		0014			<del>- "</del>	atios to cia	l	- ""	İ		1
Depth	6N2d	602b	6P2a	6Q2a		Ext.	5A3a	ı —	ا ا			CEC	Ext.	15-bar	Ca/Mg		5C3	5C1
(In.)	Ca	Mg	Na	К	Sum	acidity	Sum	İ	Ext. Al			Sum	iron	Water	Ca/mg	1	Sum	NHAO
		1	l				cations	ŀ	l						}	ļ	cations	
~ ~		1 0 0			meq/100 g		20.1		-						-	-	Pct.	Pct.
0-3 3 <b>-</b> 9	3.0	0.8	tr. tr.	0.3	i l	9.3 3.2	13.4 4.2	1							1		30	
9-14	1.1	0.3	tr.	0.1		2.0	3.5								1	1	24 43	
14-18	1.9	0.3	tr.	0.1		2.5	4.8										48	
18-25	3.2	0.6	tr.	0.2		3.2 8.2	7.2								[		56	
25+30	4.8	2.0	ستتس	0,2			15.2	<b> </b>	<del> </del>			-		ļ	ļ		16	├
3 <b>0-</b> 35	4.7	2.8	0.1	0.3		5.3	13.2	l									60	
35-44 44-54	2.8	2.2	0.1	0.2		4.5	9.8	1							1		54	1
54-62	1.3	1.4	tr. 0.1	0.1		2.0	5.0 5.2										60 56	Ī
																	Ĺ	L
				Clay Fract	ion Analysis	7Alb-d												
Depth (in.)	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
			7A2	 !														
	<del> </del>		X-ra				7	13—-	igspace						= chlorite, Vi			= mica
	1							1				iet. = li	riorstratifié:	u layer, Qt	z. = quartz,	ni. = Na01	inité	
	1				]			l							t determine			
				T								tr. = tra	ica, x = sm:	ali, xx = m	noderate, xxx	= abunda	nt, xxxx =	domin
	1	1 3	i l	l	1		1	I	1									

Soil type: Alvin sandy loam

Soil Nos.: S54Ill-78-2

Location: Putnam County, Illinois. T. 32N., R. 2 W., Sec. 26, SW 1/4, NW 40, NW 10, from center of

road along top of ridge SE 16 rods.

Vegetation. Thin bluegrass, a few weeds, brists, and oak and bickory trees.

Horizon and Beltsville
Lab, Nos.

O to 3 inches. Very dark brown (10YR 2/2), sandy loam, fine crumb to weak fine granular. A1. 54918 A21 3 to 9 inches. Dark brown (10YR 3.5/3) sandy loam to loamy sand, single grain, moderately 54919 loose. 9 to 14 inches. Dark brown (7.5YR 3/4), light sandy loam to loamy sand, single grain very A22 54920 friable. 14 to 18 inches. Brown to dark brown (7.5YR 4/3.5), light sandy loam to loamy sand, 54921 breaks into irregular angular fragments, very slightly compact and very slightly cemented. B21 18 to 25 inches. Brown to dark brown (7.5YR 4/3) (90%) mottled with dark gray (N 4/) (10%), 54922 clay loam, breaks into irregular angular fragments. B22 25 to 30 inches. Brown to dark brown (7.5YR 4/3) (98%) stained with black (5YR 2/1) (2%), clay loam, breaks into irregular angular aggregates 1/2-3/4" in size. Structure is very 54923 weakly developed. The black stainings are part of the aggregate faces. 30 to 35 inches. Dark brown (7.5YR 3.5/4), clay loam, breaks into 3/4" subangular blocky weakly developed aggregates, ped face has 5 percent very dark brown (7.5 YR 2/2) stainings of **B23** 54924 organic matter or manganese, horizontal lying roots end in this horizon. B24 35 to 44 inches. Dark brown (7.5YR 3.5/4), sandy clay loam, breaks into irregular angular fragments, very few vertical roots. Some black (N 2/) soft manganese concretions present. 54925 44 to 54 inches. Yellowish brown (10YR 5/4) loose sand banded with dark reddish brown 54926 (6YR 3.5/4) sandy clay loam iron bands. 54 to 62 inches. Dark yellowish brown (10YR 4/4) sand to loamy sand banded with dark reddish brown (6YR 3.5/4) sandy clay loam iron bands. 54927

Notes: All colors from moist samples.

SOIL Alvin fine sandy loss

SOIL Nos. 854111-99-7 LOCATION Will County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 54963 - 54972

	T	1B1b						Size clas	s and parti	cle diamete	er (mm) 3A	t						Ξ
			Total					Sand		St	It				3B2		rse fragme	nts 3
<b>5</b>	Ì	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		int, 111	Int. II				2A2		Ī
Depth	Horizon	(2-0.05)		( < 0.002)	coarse			l	(0.1-0.05)	0.05.0.02	1	1	2011		Cm	<b>&gt;-</b> 2	2 - 19	19-
(in.)	1	(2-0.05)	0.002)	( < 0.002)	(2-1)			1	(0.1-0.03)	0.05-0.02	0.002)	(0.2-0.02)	(2-0.1)		ÇM			t, of _
0-6	Ap	-	27.7	5.3	Τ.	2.0	12.2	38.5	14.3	<del></del>	14.2	47.3	<b>—</b> —			Pct.		76mm T
6-11	A21		29.2	5.4	-	1,6	11.7	37.6	14.5		15.3	47.3				_		ı
11-16	A22		28.0	7.2	-	1.5	11.4	37.6	14.3		15.4	45.8					1	
16-20	B1	<del> </del>	22.9	11.6		1.4	11,2	38.4	14.5		12.1	45.6			<del></del> -	<del></del>		╀─
		1			<b>-</b>									l		l		Į.
20-27	B21	j	15.8	16.5	-	1.3	11.1	40.2	15.1		7.7	45.0	Ι,			-	Ì	1
27-35	B22	<u> </u>	9.5	15.4	-	1.4	12.3	45.1	16.3		4_3	45.3						<b>!</b> —
35-44	<b>B</b> 23		9.8	13.1	-	1.8	12.7	44.8	17.8	l	3.7	47.9				-	1	<b>!</b>
	B3	1	10.7	11.5	- 1	3.6	14.4	44.1	15.7	l	4.1	46.6	1	ĺ		-	1	
<u>50-55</u>	C1		8.6	6.0	0.1	6.2	21.2	45.3	12.6		3.2	39.4				-	<u> </u>	4_
55-65	(C2		11.6	9.6	-	3.6	17.2	41.8	16.2		4.2	45.5				-		
	<u> </u>	<u> </u>		<u> </u>					<u></u>	<u> </u>		<u> </u>				<u> </u>	]	<u> </u>
	6A1a	1					<del> </del>	Bulk densit	<del></del>	4D1	<b></b>	later conte	r —	j	4C1		pН	т_
Depth	Organic	Nitrogen	C/N		Carbonate	Ext. iron	ľ	4A1e	4Alh	1	ŀ	4B1c	4B2				8Clc	80
(ln.)	carbon	1	1	}	as CaCOa	as Fe	ì	}s bar	Oven dry	COLE	1	3≰ bar	15 bar	1	WRD	l	(1:1)	6
	Ī		1				1	3 081	) Over the		1	a Dar	19 94F					ı
	Pct.	Pct.	<u> </u>		Pct.	Pct.	g/cc	g/cc	E/cc		Pct.	Pct.	Pct.		in/in		KCI	#
0-6	0.61	1	1	}	\	Ì	i	i	1	1	1	l	<b>l</b> '	1	]	]	1	6
6-11	0.18	1	ł	1			1	l	ĺ	l	l	l				1	1	5
<u> 11-16</u>	0.08	<u> </u>	L	$\bot$							ļ	ļ	L				<u> </u>	5
16-20	0.10	•	l				l	1	l		l	l				l	l	5
20-27	0.09	ì	1	1	]		1	ì	]	]						l		5
27- <u>35</u>	0.05	ļ	ļ	L	L	L	L	L	<b></b>		L	<u> </u>	<b>.</b>		L	ļ	<b> </b>	5
35-44	0.03		-	1	1 7		l	l -	i	1	}	I	l i			1	Ī	4
44-50	0.03	1	l				l	l	l	l	l	l	l .		l	1	Į.	4
50-55_	0.07	1		L			<u> </u>			<u> </u>	L	ļ <u>.</u>	<u> </u>	L	<b> </b> _	<b>L.</b>	1	5
55-56	0.06							1		1						l		4
			ĺ	ĺ						1								
		Extractat	te bases	5B1a		6HLa	, c	EC	6 <b>G</b> 1d				atios to cia	y	803		Base saturatio	
Depth	6N2d	602b	6P2a	6Q2a		Ext.		,	_				[				5C3	5
(In.)	Ca	Mg	Na	l K			5A3a	ĺ	Ext.	l		CEC	Ext.	15-bar	Ca/Mg	Į.	S	
	1	""	1	] "	Sum	acidity	Sum cations		A)			Sum	iron	water			Sum cations	NH,
	4	·			meq/100 g				-	ł					L		Pct.	<u> </u>
0-6	2.9	1.8	tr.	0.1		2.7	7.5		i	[			Ī			ŀ	64	
6-11	1.2	0.9	tr.	tr.	\	3.2	5.3	l	i	1	ì	ì	· ·	ì	ì	ì	1 40	1
11-16	1.7	0.7	tr.	tr.		2.9_	5.3	I.			L _			L			45	L
16-20	3.2	1,2	0.1	tr.		4.2	8.7	1					1				52	[
20-27	3.9	2.6	0.2	0.2		5.9	12.8		1				1	ŀ	1	l	54	1
27-35_	4.0	3-7	0.1	0.1	1	5.1	13.0		L	<u></u> _		1	L	L	L	L	61	L
35-44	3.2	3.2	tr.	0.2		4.0	10.6										62	
44-50	2.7	2.9	tr.	0.2		4.4	10.2		1	1				ł	l		57	1
50-55	1.3	1.4	0.1	0.1	<u></u>	2.9	5.8		L	L	L			L			50	L
55-65	2.7	2.5	tr.	0,2		3.4	8.8										61	1
	ļ	1					ļ <u>.</u>		<u> </u>	<u> </u>	<u> </u>			<u></u>	<u> </u>			<u> </u>
	<u> </u>	<u> </u>			tion Analysi		1		r —	1								
Depth	Mt.	Çhi.	Vm.	Mri.	Int.	Qtz.	KI.	Gibbsite										
(ln.)		7A:	] 2				ļ		ļ									
	-	7A2 X-ray						A3	-	-			Montmorillo:					m
	<u> </u>	<del>`</del>	^ ''	, <u> </u>									GLEBL2-FLR FILLS	O ISPARI, OT	z quartz,	KI. = NAD	minne	
	-	<u></u>	^					İ								KI. = K#0 d, dash =		ed,
	-		^"									Relative	nterstratifie amounts: acq, x = sm	blank no	t determine	d, dash =	not detect	
			^1									Relative	amounts:	blank no	t determine	d, dash =	not detect	
			A18									Relative	amounts:	blank no	t determine	d, dash =	not detect	
			A-18									Relative	amounts:	biank — no all, xx — m	t determine	d, dash =	not detect	
			X-18									Relative	amounts:	blank no	t determine	d, dash =	not detect	

**#** 10 1 1

Soil Type: Alvin fine sandy loam.

Soil No.: 854I11-99-7

tion: Will County, Illinois. T.32 N., R.10 E., Sec. 7, NE 1/4, NW 40, NW 10, 16 rods east of half line (bridge 20 rods west of half line) and 23 rods south of center of road. Tocation:

Vegetation and land use: Kentucky bluegrass and a few weeds.

Slope and land form: 16 percent.

Sampled by and date: H. L. Wascher, B. W. Ray, and J. B. Fehrenbacher, November 9, 1954.

Horizon and Beltsville Lab. Nos.

54970

54977

0 to 6 inches. Very dark grayish brown (10YR 3/2), fine sandy loam, breaks into sharp edged 54963 fragments containing moderate amount of fibrous bluegrass roots and a few worm channels filled with lighter colored material.

421 6 to 11 inches. Brown (10YR 4.5/3), fine sandy loam, breaks into irregular sharp edged frag-54964 ments with no definite cleavage faces, moderate number of fibrous bluegrass roots, some worm channels filled with darker colored material.

A22 11 to 16 inches. Brown (10YR 5/3), fine sandy loam to loamy fine sand which breaks into irregular sharp edged fragments with no definite cleavage faces, moderate to few fibrous blue-54965 grass roots, few worm channels, some open, some filled with darker colored material.

16 to 20 inches. Brown (7.5YR 4.5/4), fine sandy clay loam, breaks into 1/4-3/8 inch weakly R1 54966 developed irregular blocky aggregates with a few faint lighter colored coatings brown (IOVR 5/3), few fibrous roots, occasional unfilled worm channels.

20 to 27 inches. Brown to dark brown (7.5YR 4/4), clay loam, breaks into 1/2 - 3/4 inch **B2**1 ていりんて

### unfilled worm channel.

B22 27 to 35 inches. Brown to dark brown (7.5YR 4/4), clay loam, breaks into 1-1 1/2 inch 54968 irregular blocky aggregates. An occasional grayish streaking in lower part. A few fine fibrous roots, an occasional small open worm channel.

35 to 44 inches. Brown to dark brown (7.51R 4/4) mottled faintly with light yellowish brown B23 (low 6/4), some black (low 2/1) iron-manganese concentrations, fine sandy clay loam which breaks into irregular sharp edged fragments with no definite cleavage faces, slightly compact, 54969 lightly cemented.

> 44 to 50 inches. Brown (7.5YR 4.5/5) mottled with light yellowish brown (10YR 6/4), some very dark brown (10YR 2/2) iron-manganese concentrations, fine sandy clay loum to fine sandy loam, breaks into large irregular fragments with no definite cleavage faces, a few medium and coarse sand grains.

50 to 55 inches. Yellowish brown (10YR 5/4) with bands of brown to dark brown (7.5YR 4/4). 54971 losmy sand with thin bands of sandy losm to sandy clay losm.

55 to 65 inches. Yellowish brown (10YR 5/4) with bands of light yellowish brown (10YR 6/4), gome very dark brown (10YR 2/2) fine incommensus concentrations. Loow send with this ban

SOR Ambraw silty clay loam

	SOIL SURVEY LABORATORY Lincoln, Nebraska General Methods: 1A, 1Blb, 2Al, 2B										LAB	Nos	19297	-19303	<u>M</u>	y 16,	16, 1966				
	General	Methods:	1A, :	IBIb, a	2Al, 2E	B			Size cla	ess and parti	cle diamete	r (mm)	a	3A1					_		
	ĺ			Total			1		Sand		Sil						Coarse fi	agments	2A2		
	Depth (in.)	Harizon	Sand (2-0.05)	\$ilt (0.05–	Clay ( < 0.002)	COBTSE	Coarse (1-0.5)	Medium (0.5–0.25)	Fine (0:25-0.1	Very fine	0.05-0.02	(0.02–	int. II (0.2–0.02)	(2-0.1)		=	- 2 2	- 19   19			
	,,		(	(0.05 <u>–</u> 0.002}	( - 0.002.)	(2-1)	Pct	t. of 🖛 2 :	MM	(0.1-0.05)	[5,55,5,5]	0.002)		,,,,,,			Pct.	Pct. of <= 76mm	<del>,</del>		
	0-6 6-12	Ap Al	19.8 21.0	49.7	30.5 32.8 32.0	1.0	5.5 6.0	7.6 8.0	4.8	0.9 0.9 1 1	10.7	39.0	12.9 12.1 11 0	18.9 20.1		t	r				
	12-16	Rie	21.0	)12 B	32.0	1 7.	5.0	0.5.	ه کما	111	9.9	30.5	11 0	25.1		t:		ı			
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SOIL Nos. 863111-12-1 LOCATION Clark County, Illinois

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Soil type: Ambraw Silty Clay Loam
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Soil Nos.: 863 Ill-72-1

Tt area

RllW and 90 feet north of small ditch on half-mile line.

Vegetation and use: Cropland (corn stalks).

UIL 19431 estimate: 31 to 33 percent.)

Slope and land form: Nearly level Wabash River valley floor.

Drainage and permeability: Poorly drained with slow surface run-off; moderately permeable.

Parent material: Alluvium

Described and sampled by: L. E. Tyler, G. O. Walker, G. Holhubner, I. Jorgensen, October 17, 1963.

Horizon and

Ap 0-6 inches, very dark grayish brown (10YR 3/2) medium silty clay loam; weak, medium granular structure; LSL 19297 friable; sand grains evident in matrix; many roots; slightly acid; abrupt, smooth boundary. (Clay

Al 6-12 inches, very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) medium silty clay loam; LSL 1929R week coarse subancular blocks attentions firms cand grains suidant in matrix; many roots; alightly

UIL 19432 acid; abrupt, smooth boundary. (Clay estimate: 30 to 32 percent.)

Blg 12-16 inches, dark gray (10YR 4/1) medium silty clay loam with common, fine, distinct dark brown LSL 19299 (10YR 4/3 and 3/3) mottles; dry color is gray (10YR 6/1 and 6/2) and kneaded color is dark grayish UIL 19433 brown (2.5Y 4/2); weak to moderate, fine and medium subangular blocky structure; firm; sand grains evident in matrix and sparse gray (when dry) silt coats on peds; many roots; medium acid; clear smooth boundary. (Clay estimate: 31 to 34 percent.)

B21g 16-25 inches, dark gray (10YR 4/1) medium silty clay loam with common, fine, distinct dark brown (7.5YR LSL 19300 3/2 and 4/4) mottles in ped interiors only; moderate, fine and medium prismatic structure breaking to weak to moderate, medium subangular blocks; firm; discontinuous very dark gray (10YR 3/1) dull films on peds; sand grains evident in matrix; common roots and Fe-Mn concretions; medium acid; gradual smooth boundary. (Clay estimate: 35 percent.)

B22g 25-35 inches, dark gray (2.5Y 4/1) medium silty clay loam with common, fine to medium, distinct brown LSL 19301 (10YR 5/3), yellowish brown (10YR 5/6), and strong brown (7.5YR 5/8) mottles principally in ped interiors; moderate, fine and medium, prismatic structure breaking to weak, medium subangular blocks; firm; discontinuous, very dark gray (10YR 3/1) dull films on peds; sand grains evident in matrix; few roots; slightly acid; gradual, smooth boundary. (Clay estimate 32 to 34 percent.)

B3g 35-45 inches, dark gray (2.5Y 4/1) light clay loam with many, medium, distinct dark brown (7.5YR 3/2) and LSL 19302 strong brown (7.5YR 4/6) mottles; weak vertical cleavage grading to massive; friable to firm; few JUL 19435 Feeling concretions—creedons crown - lightly said, gradual wave boundary. (Clay setimate: 30 percent

SOIL SURVEY LABORATORY Lincoln, Nebr. September 1958

SOIL TYPE Ashkum LOCATION Will County, Illinois silty clay loam

SOIL NOS. <u>\$57111-99-2</u> **LAB. NOS.** 6918-6925

} !		lBla.		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	er ceut)	<u>3A1</u>		
DEPTH INCHES	HORIZON	VERY COARSE SAND 2-1	COARSE SAND 1-0.5	MEDIUM SAND 0.5-0.25	FINE SAND 0.25-0,10	VERY FINE SAND 0, 10-0.05	SILT 0.05-0.002	CLAY < 0.002	0.2-0.02	<b>002-000</b> 1	2A2 > 2 <19mm	TEXTURAL CLASS
6-8½ 8½-11 11-16 16-21	Allp Al2p Al3 Bl B21	0.4a 0.6a 0.4a 0.8a 0.4a	0.6a 0.7a 0.7a 1.0a 0.8a	0.7a 0.8a 1.0a 1.0a	3.2a 3.2a 4.0a 3.7a 3.1a	2.8a 2.6a 2.9a 2.7a 2.1a	51.0 48.9	41.1 42.1 41.1	20.2 18.6 19.6 18.9 18.3	37.5 37.1 34.8 35.9 38.7	Tr. Tr. Tr.	sicl sic sic sic sic

Soil type: Ashkum silty clay loam

Soil No: : S57111-99-2 University of Illinois Laboratory Nos.: 18044 through 18051.

Location: Will County, Tilinois; 610 feet west of north quarter corner or 280 feet west of concrete culvert and 48 feet south of center of paved road, NW160, NE40, NE10 of Section 22, T34N, Rile.

Classification: Humic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Redclover. Climate: Humid temperate. Slope: 1 percent to east.

Erosion: None.

Elevation: 710 feet approximately.

Parent material: None to very thin Feorian loess cover on silty clay loam Wisconsin till of Cary age.

Sampled by: L. J. Bartelli and R. H. Jordan, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 18, 1957.

Horizon and Lincoln Lab. Number

O to 6 inches. Black (10YR 2/1 moist) silty clay loam; weak coarse subangular blocky structure breaking 6918 to moderate medium to coarse granular; slightly firm when moist; boundary abrupt and smooth; pH is 6.5;

6 to 8½ inches. Black (10YR 2/1 moist) silty clay loam; moderate medium angular blocky structure; **A12**p 6919 very firm when moist; dense; boundary abrupt and smooth; pH is 6.5; roots common; this is a plow sole or

Al3  $8\frac{1}{2}$  to 11 inches. Black (10YR 2/1 moist) silty clay loam; moderate medium subangular blocky; firm when 6920 moist; boundary clear and irregular; pH is 6.5; few small pebbles; roots common.

11 to 16 inches. Very dark gray (2.5Y 3/1 moist) heavy silty clay loam; tongues of black (10YR 2/1 Bl. moist) silty clay loam from above; moderate medium subangular blocky structure; firm when moist; 6921 boundary gradual and smooth; pH is 6.5; roots common; few small iron-manganese concretions; thin discontinuous clay skins; small pebbles strongly coated with very dark gray (2.5Y 3/1 moist) clay skins.

16 to 21 inches. Yerv dark gravish brown (2.5Y 3/2 moist) heavy silty clay loam with common fine dis-B21

. . . . . . . . . . . . . . . . . . 

B22

6923

strong medium angular blocky; firm when moist; boundary clear and smooth; pH is 7.0; roots common; common iron-manganese concretions; few shale fragments; roots follow structure planes; thin continuous very dark gray (2.5Y 3/1 moist) clay skins.

21 to 26 inches. Dark grayish brown (2.5Y 4/2) to very dark grayish brown (2.5Y 3.5/2 moist) heavy silty clay loam with common fine distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; weak medium prismatic structure breaking to strong medium to coarse angular blocky; firm when moist; boundary clear and smooth; pH is 7.0; roots common on ped faces; few small pebbles; common small iron-manganese concretions; few shale fragments; thin discontinuous very dark gray (2.5Y 3/1 moist) clay skins.

כבן

SOIL Ave silt loam SOIL Nos. S59771-68-1 LOCATION Montgomery County, Illinois

SOIL SURVEY LABORATORY . Lincoln, Nebraska

LAB. Nos. 12273-12282

January 1965

		1P1	A					Size clas	s and part	icle diamete	er (mm)	3A1						
			Total		Γ			Sand		Sı	It	<u> </u>		T		Coa	rse fragme	nt@A2
			Şilt	Clay	Very		Medium	Fine	Very fine		Int. III	ini. II		]				}
Depth (in.)	Horizon	Sand (20 05)		( < 0.002)	coarse	Coarse	1	(0.25-0.1)		4		(0.2-0.02)	(2-0.1)			<b>&gt;−</b> 2	2 - 19	19-76
(In.)	İ	(20 03)	0.002)	1 4 0.0021	(2-1)	(1-0.3)	10.3-0.23	10.23-0.17	10.1-0.05	0.05-0.02	0.002	10.2-0.02	(2-0.1)	}				t. of
		-					t. of 🖛 2									Pct.	- < 7	76mm
9-7	A1	4.1	81.3 79.9	14.6 16.7	0.3a	1.0	0.95	1.2e	0.7c	30.7 28.4	50.6 51.5	31.9	3.4			-	-	
7-12	A2	3.4	79.9		0.1a	0.9a	0.86	1.0c	0.6e			29.4				-	-	
12-18	B21	3.6	75.3	21.1	0.1a	0.9a	0.96	1.06	0.76	25.1	50.2	26.2	2.9					<b></b>
18-22	B55	3.1	73.3	23.6	0.2a	0. Ha.	0.68	0.8a	0.7a	24.8	48.5	25.9	2.4			_	<i>-</i>	
22-25	B23& A'2		70.9	26.4	0.3a	0.89	0.4a	0.4a	0.6a	23.8	42.9	21.0	1.6			-		1 1
25-27	A'2 & B'2).	2.1	63.2	34.7 39.0	0.2a	0.7a 0.2a	0.3a	0.5a	0.5a	20.2	39.2	21.2	0.9		<u> </u>	<u>-</u>	<u> </u>	<del>-</del>
27-37 37-45	B'31m	2.9	59.4 70.9	26.2	_	0.40	0.7c	1.1c	0.7c	26.9	44.0	28.1	2.2		1		-	
45-54	B' 32m	7.6	68.9	23.5	0.1a	1.2c	2.00	3.1c	1.2c	28.3	40.6	30.8	6.4		1	_	-	
54-66+			52.4	16.8	0.3e	5.8c		12.2	3.2	23.7	28.7	31.7			<del> </del>	<u> </u>	<del>-</del> -	<del>├</del>
, ,,	سرر سنا	30.5	,,,,,,,			7.00	10.0		3,5	-3.1	1 20.1	34.1	-,.0		1	_		
l		ĺ		ŀ			l	ł		İ	L					Ĺ		
	6Ala	6Bla		ĺ	ĺ	6Cle	Ī	Bulk densit	y	14D1	}	Vate	r Cont	ent.			pН	
Depth	Organic	Nitrogen	C/N				4Ala	4Ale	4A1h	Exten	4B4	493	4B1b	482	4C1			8Cla
(In.)	carbon	HILLOSOL	C/N		Carbonate as CaCO <sub>2</sub>	Ext.	Field-		Oven-		Field.			15 - Bar	12/3- to			(1:1)
(***.*					as cacca			30-Cm.	Dry	ity	State				15-Bar			(1:1)
	<u>d</u>				l	as Fe	1		•	in.per	ł				in per	!		H <sub>2</sub> O
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc	horizon	Pct.	Pct.	Pçt.	Pct.	horizor			┖┸
0-7	1.28	0.118	1.3			0.8	1.36	1.35	1.38	0.05	10.3	27.1		6.4				5.7
7-12	0.42	0.053	8	l	ļ	1.0	1.41	1.39	1.42	0.04	11.8	24.0	l	6.7				5.2
12-18	0.28	0.041	78		Ļ	1.2		1.42	1.48	0.08	11.6	24.5	21.5	8.5.	1.3			4-7
18-22	0.25	0.032	8			1.3	1.47	1.42	1.47	0.06	9.3	24.8	23.2	9.9	0.8			4.6
22-25	0.23	0.029				1.5	1.58	1.48e	1.58	0.06	6.0	22.8e	1	11.6	0.5			4.5
25-27	0.21		<b></b>			1.3	- 0	1. 10.	1 (=	0.10		06 1	- e	15.4	7 1.			4.3
27-37	0.21		ł		1	1.1	1.64	1.42e		0.22	5.8	26.4e		17.7 12.8	1.4			4.3
37-45	0.14	Ì	Į.			1.3			1.61		3.3	25.2	23.5	11.7	1.6	Ì		4.6
45-54 54-66+	0.15	<del></del> -	<del> </del>		<del> </del>	1.1		1.53	1.72	0.15	2,1	18.3	63.7	8.3	1.0		<del> </del>	4.8
1 )4=00+	0.09					0.0	1	12.00	12	0.00		20.5		V.5		1		'''
		<u>L</u>	<u> </u>		<u> </u>		<u> </u>	<u> </u>	<u> </u>		<u>l                                    </u>			<u> </u>	<u> </u>		<u> </u>	
			ile bases	5Bla		6⊞.a	Cat.	Exch.	6G2a	Ī	l				8D3		Base sat	turation
Depth	6N2b	602b	6P2a	602a	i			ъ.	]	!			ŀ				5C3	5C1
(ln.)	,	۱	Na	۱.,		Ext.	5A3a	5Ala	KC1			İ	ł .		Ca/Mg		Sum	L
· '	Ca	Mg	l la	K	Suun	Actorby	Sum	NH4 OAC					ļ.				Cations	aMH <sup>†</sup> O∀C
	1_	l	1	ŀ	meq/100 g		Cations	şi.	Al	1		}	ļ	i	1	!	Pct.	Pct.
0-7	4.5	1.6	Tr.	0.4	6.5	7.5	14.0	10.3	1 -	<del> </del>	<del> </del>	<del></del>	-		2.8		46	63
7-12	3.6	1.5	Tr.	0.3	4.8	6.3	11.1	8.5	1	[		ł		i	2.0		43	56
12-18	2.0	2.0	0.1	0.2	4.3	10.0	14.3	10.1	L					1	1.0		30	42
18-22	1.8	3.0	0.1	0.2	5.1	12.0	17.1	13.0	5	1	1	Ţ			0.6		30	39
22-25	2.1	4.2	0.1	0.3	6.7	13.3	20.0	15.3		1		1			0.5		34	44
25-27	3.2	6.6	0.2	0.4	10.4	16.6	27.0	21.3	8	<u> </u>	<u> </u>	ļ	L	L	0.5		38	49
27-37	4.0	8.1	0.3	0.4	12.8	17.9	30.7	24.2	9	1	ļ	l	l		0.5		42	53
37-45	3.2	6.2	0.4	0.2	10.0	12.3	22.3	18.1	5 L	1			ł	1	0.5		45 48	55 60
45-54 54-66+	2.8	5.8 4.5	0.4	0.2	9.8	10.8	20.6 14.5	16.2	2	1	<del> </del>		<b></b>	<del>                                     </del>	0.6	<u> </u>	53	88
24-00+	2.0	,,,,	0.3	0.1	7.7	0.0	14.5	11.4	-	1	1		l	l	0.0		,3	55
1		l	1	1	1	ł	}	1	1	}	]	1	ŀ					
	Ratios	to Cl	ay SDI			Δ.	> 50%	Fe-Mo	nodule	·s.					•			
			· ·	İ	1	ъ.	25-509	6 Fe-Mi	nodul	es.								
Depth	NH <sub>h</sub> OAc	Ext.	15-Bar		1	c.	5-25%	Fe_Mn	nodule	8.								
	11111111111111		B. 4	ı	I	a.	7.1 Kg	s/M° to										
(In.)	CEC	Iron	water		1													
	ciec	Iron	water					ed at	1/3-Be	ir inst	Search OF	40801	rbed to	30-C	a.			
(in.)	cuec				ļ			ed at	1/3-Be	ir inst	Jean O	a disco	rbed to	30-Ci	n.			
(In.) 0-7	0.70	0.05	0.44					ed at	1/3-Be	ır inst	Seatt O	, and and	rbed to	30-Ci	<b>.</b>			
0-7 7-12	0.70 0.51	0.05 0.06	0.44 0.40					ed at	1/3-Be	ır inst	eau o	, adason	rbed to	30-Ci	n •			
0-7 7-12 12-18	0.70 0.51 0.48	0.05 0.06 0.06	0.44 0.40 0.40					ed at	1/3-Be	ir inst	eau o	, adsor	rbed to	30-Cr	n.			
0-7 7-12 12-18 18-22	0.70 0.51 0.48	0.05 0.06 0.06 0.06	0.44 0.40 0.40 0.42					ned at	1/3-Be	ir inst	eau o	, adsor	rbed to	30-Cr	n.			
0-7 7-12 12-18	0.70 0.51 0.48 0.55 0.58	0.05 0.06 0.06	0.44 0.40 0.40					med at	1/3 <b>-</b> ₽€	ir inst	ead of	, suson	rbed to	30-Ci	n.			

31 Soil type: Ava silt loam Soil Nos.: 859111-68-1
Location: Montgomery County, Illinois; T7N, R2W, Sec. 23, NW160, NEWO, SE corner, 300 feet north and 100 feet west.
Vegetation: Woodland, predominantly cak less than 6 inches d.b.h.
Slope, land form, and parent material: Gently convex 3 percent slope to northeast; located near edge of gently sloping ridge top and at elevation below local ridge crest in the dissected, loess-mantled Illinoian drift plain. Local relief between ridges and adjacent streams about 20 to 30 feet. Loess about 4-1/2 feet thick overlying medium textured Illinoian drift or drift-derived material. Described and sampled by: F. J. Carlisle, R. B. Grossman, J. B. Fehrenbacher, C. E. Downey, and G. O. Walker, October 26, 1959. Horizon and Lincoln Lab. No. About 3 inches thick and consisting of this year's leaf fall. O to 7 inches. 10YR 4/2 silt loam; massive with faint expression of compound blocky and fine granular structure; very friable; many fine and medium tubular pores, some with very irregular diameter; roots abundant; 12273 uppermost 1 inch is 10YR 3/2 with moderate medium to fine granular structure; pH 6.0; clear wavy boundary. 7 to 12 inches. 10YR 4/3 silt loam; very weak thin platy structure evident in place; disturbed material breaks readily to medium subangular blocky fragments; aggregation very weak; friable; many fine and few medium tubular pores; roots abundant; about 20 percent of horizon consists of 10YR 4/2 to 3/2 in krotovinas 3- to 20-mm. 12274 across; pH 5.6; gradual boundary. 12 to 18 inches, 10YR 4/4 to 5/4 heavy silt loam; very weak medium subangular blocky structure; friable; R21

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SOIL \_\_\_Ava silt losm

SOIL Nos. 551111-100-3 LOCATION Williamson County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 511083 - 511088

Depth (n.)										1	mm) 3A1		and parti							1B1b		
Depth   Horizon   Gardo   Gardo   Gardo   Horizon   Horizon   Gardo   Horizon   Horizon   Horizon   Horizon   Gardo   Horizon   Horizo	agments	fragme	se fragm	_	_	382			Τ			Silt		Sand					Total			
C-0.25   0.05-    0	1								٠.	Int II	nt III		Very fine	Fine	Medium	Canna	Verv	Class	Cilt	5444		
Ch	- 19   I!	2 - 19	2 - 19	2	>	C=		(2.0.1)	- 1			05 0 03					coarse			1	Horizon	
Color   Al   2   2   5   82   6   1   1   7   0   2   0   3   0   1   0   9   0   7   32   9   1   1   1   1   1   1   1   1   1	Pct. of	Pc			1	UΠ		(Z-U.1)	۲-1	NO.2-0.02	0.002)	1.03-0.02	(v. 1–0.05)	(v.25-0.1)	(0.3-0.25)	(1-0.5)		( < 0.002)	0.002)	(2-0.05)	1	(1117)
1-11   A2	—= 76m	<b></b> < 7	۲	t.	Pc									1 <i>m</i>	of << 2 n	Pct	-			<u> </u>	ŀ	
1-11   A2				- 1				1.8	ıΤ	34.1	19.9	32.9	0.7	0.9	0.4	0.3	0.2	14.7	82.8	2.5	A1	0-4
1-11 A3 a A-20 B11 2.1 73.6 24.3 - 0.1 0.1 0.7 0.6 25.6 17.0 27.5 1.5 1.3 0.2 0.2 1.7 65.0 33.3 - 0.3 0.3 0.5 0.6 23.7 14.3 24.5 1.1 0.2 0.2 0.6 21.1 1.4 63.8 34.8 - 0.1 0.2 0.5 0.6 23.7 14.3 24.5 1.1 0.1 0.2 0.6 0.6 25.2 145.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 14.1 0.1 0.1 0.2 0.6 0.6 0.6 14.1 0.1 0.1 0.2 0.6 0.6 0.6 0.6 25.2 146.6 26.2 0.9 0.1 0.2 0.6 0.6 0.6 25.2 146.0 15.5 0.7 0.0 0.4 0.6 0.6 0.6 0.6 0.6 25.2 146.0 15.5 0.7 0.1 0.2 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6				-	١.						8.2	32.1					1 I					4-11
A-20   Bill   2,1   73.6   24,3   - 0,4   0.4   0.7   0.6   26.6   47.0   27.5   1.5   - 0.7   0.3   0.3   0.3   0.3   0.5   0.6   23.7   41.3   24.5   1.1   - 0.7   0.4   0.4   0.7   0.5   0.6   23.8   42.0   22.6   0.8   - 0.8   0				1						J	• -											
3-28 B12				- 1	١.			1.5	5	27.5	7.0	26.6	0.6	0.7	0.4	0.4		2h.3	73.6	2.1		
0-36 821				_	١.																	
G-\$1   B22   1.5   71.8   26.7   -   0.1   0.2   0.6   0.6   25.2   46.6   26.2   0.9   -	- 1								٤١	20.6		21. Y					1 1	37.3				
SAIR   Organic Nitrogen   C/N   Carbonate   Est iron   Sair   S	_				<del> </del>												1					
Solita   Carbon   C								V.,		20.2		ر ۲۰۰۰	<b>v.</b> 0	٠.٠	V.2	V.1		20.,	11.0	,	BEE	0-41
SA12   SA12   SA13   SA13   SA13   SA13   SA13   SA14		-						-	$\dagger$													
Organic   Orga	н	ρH	ρН			401		l .	nteni	Vater cont		AD1		Bulk density							6010	
Collaboration   Collaboratio	Çle 8	8Clc	8Clc	Γ		.51		4B2	Ţ	481c		751	4Ath	4A1e		Ext ime	Carbonate		C/N	Nitrosee		eoth
Pet   Pet						WPS		,,,,				COLE	TOTAL	7010					0,11	,vgcII		
Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   g/cc   g/cc   g/cc   g/cc   Pet.	(:1)	(1:1)	(1:1)		1	WKD		15 bar	ır	⅓ bar		COLE	Oven dry	½ bar		10						
1,20	(CI I	KCI	KCI			in/in		Pet	-	p.,	Pet		alee	a/ce	ales	D <sub>re</sub> s	Dot			p,	B-4	
1-14	1			$\dashv$	<del>                                     </del>				+	ru.	rut.		R/ CC	6/66	E/ CC	TEL,	7-61.	-	-	ret.		0-k
1-14	1			1	l					1												
1.3   0.7   0.1   0.3   0.6   0.3   0.4   0.3   0.4   0.3   0.4   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.4   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3   0.3   0.4   0.3	١.			ŀ	1				- [					- 1							0.1	
3-28	1			$\rightarrow$	<del> </del>				+	<del>                                     </del>												
Clay Fraction Analysis 7Alb-d   Clay Fraction Analysis 7Alb-			Ì	į.	1																	
Extractable bases 591a	1			- [	1					1		1										
Extractable bases 591a   GRLs.   CEC   GGId   Ratios to clay   SD3   BI	12			$\dashv$	-				+	1									-	<del></del> -		
epth (n.) 6N2d 6O2b 6P2a 6Q2e (n.) Ext. 5A3a (n.) CEC (n.) Sum (n.) CEC (n.	1																				0.03	D-41
epth (n.) 6N2d 6O2b 6P2a 6Q2e (n.) Ext. 5A3a (n.) CEC (n.) Sum (n.) CEC (n.		-		_					1													
Septh   GN2d   GO2b   GP2a   GQ2a   Ext.   SA3a   Ext.   SA3a   Ext.   SA3a   Ext.   Sum   Cations   All   CEC   Ext.   I5-bar   Water   Ca/Mg   Ca   Mg   Na   K   Sum   Cations   All   Sum   Cations   All   CEC   Ext.   I5-bar   Ca/Mg   Ca   CEC   Ext.   I5-bar   Ca/Mg   Cations   CEC   Ext.   I5-bar   Ca/Mg   CEC   CA/Mg   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CA/Mg   CEC   CA/Mg   CEC   CA/Mg   CA/Mg   CEC   CA/Mg   CA/Mg	se satura	Base sat	Base \$		<u> </u>	8D3		tios to cla	Ra				6G1d	C	CI	6RLa		Bla	le bases 5	Extractab	<u> </u>	
Ca   Mg   Na   K   Sum   scidity   Sum   cations   Al   Sum   Sum   iran   water   Ca/Mg	сз	5C3	503															602a	6P2a	602b	6N2d	anth
Clay Fraction Analysis 7Alb-d   Mt.   Chi.   Vm.   Mi.   Int.   Qtz.   Ki.   Gibbsite   Mt. = Montmorillonite, Chi chlorite, Vm. = Vermicul   Int. = Interstratitied layer, Qtz. = quartz, Ki. = Kaolinit   Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = sbundant,   Call	ŀ		İ	ı		Ça/Mg	15-bar	Ext.	ı	CEC			Ext.		5A3a	LA.				0020	'''	
No.   No.		Sum					water	iron		Sum					Sum	acidity	Sum	K	Na	Mg	Ca	,01.)
0-4 4-11 1-14 1-14 1-20 0.6 2.4 0.1 0.2 13.0 16.3 3-28 0-36 3.4 6.7 0.3 0.4 17.5 28.3  Clay fraction Analysis 7Alb-d  Mt. Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  Mt. — Montmorillonite, Chi. — chlorite, Vm. = Vermicul int. = Interstratified layer, Qtz. = quantz, Mt. = Kaelinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,		cations								i		- 1			cations		ļ l					
#-11   1-1		Pct.		-	₩				4	ļ							meq/100 g					
13.0   16.3   17.5   28.3   28.3	10	18	10												13.2	10.8		0.3	0,1	0.7	1.3	
Clay Fraction Analysis 7Alb-d  Mt. Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  TA3  No analyses on this horizon  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermicul  int. = interstratified layer, Qtz. = quartz, Ki. = Kaolinit  Relative amounts: blank = not determined, dash = not  tr. = trace, x = small, xx = moderate, xxx = abundant,					L									ľ							1	1-14
Clay Fraction Analysis 7Alb-d  Mt. Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  TA3  X-ray  TA3  TA3  Mt. = Montmorillonite, Chi chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. = quantz, Ki. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,	20	20	20	T					Т						16.3	13.0		0.2	0,1	2.4	0.6	
Clay Fraction Analysis 7Alb-d  Chi. Vm. Mi. Int. Qtz. Kl. Gibbsite  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,					1				- [	1											]	
Clay Fraction Analysis 7Alb-d  Mt. Chl. Vm. Mi. Int. Qtz. Kl. Gibbsite  Mt. = Montmorillonite, Chl chlorite. Vm. = Vermicul Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,	8	38	_38	1					$\perp$	<u> L</u>					28.3	17.5	L_	0.4	0.3	6.7	3.4	
epth Mt. Chl. Vm. Mi. Int. Qtz. Kl. Gibbsite  7A2  X-ray  7A3  Mt. = Montmorillonite, Chl chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,																			-			
mepth (n.)  7A2  X.ray  7A3  Mt. — Montmorillonite, Chl. — chlorite, Vm. = Vermicul Int. = interstratified layer, Qtz. = quartz, Kl. = Kaelinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,				$\dashv$					+						* · · · ·							
wepth Mt. Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  7A2  X-ray  7A3  Mt. — Montmorillonite, Chi. — chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. — quantz, Ki. = Kaolinit Relative amounts: blank = not determined, dash = not Ir. = Irrace, x = small, xx = moderate, xxx = abundant,			<u> </u>		<u></u>	•••	,		_	<u> </u>						7Alb-d	ion Analysis	Clay Fract		<u> </u>		
Mt. = Montmorillonite, Chl chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. = quartz, Kl. = Kaolinit Relative amounts: blank = not determined, dash = not 1r. = trace, x = small, xx = moderate, xxx = abundant,	•	1.	on.	r1 <b>2</b> 0	DOI	this	ses o	anal	NO	a. 1				Gibbsite	KI .	Dłz	Int	Mi	Vm	СН	B4+	epth
7A2 X-ray 7A3 Mt. = Montmorillonite, Chi chlorite, Vm. = Vermicul Int. = Interstratified layer, Qtz. = quartz, Ki. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,																·	""	""	''''	J	••••	
X.ray  7A3  Mt. = Montrocitionite, Chi Chlorite, Vm. = vermicul Int. = Interstratified layer, Qtz. = quartz, Xi. = Kaolinit Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,																	1	ļ	l .		1	
Int. = Interstratitied layer, Qtz. = quartz, Kl. = Kaolinit  Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,	e, mi = r	ilite, mi	iculite, n	Vermic	m. = \	chlorite, V	te, Chl	ontmorillo	- M	Mt				13			1			ı	L.	
Relative amounts: blank = not determined, dash = not tr. = trace, x = small, xx = moderate, xxx = abundant,																	1	<u> </u>	^-/a		_	
tr. = trace, x = small, xx = moderate, xxx = abundant,																		l	1		1	
	ietected, kxxx ⇒r d∩	r detect	not dete int. xxxx	sh — n oundar	ad, das x = ah	determine oderate xx	lank = no II. xx = ≈	amounts:	tive	Relativ			L		L _						1	
	40	,	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	— 00	Judiale, AA	, ,, = 11	ω, x = 3III	- 1186	ır. = T												
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																	'				}	
													L		L					<b>\</b>	1	
																				T-"		•

Soil Type: Ava silt loam Soil No.: S51111-100-3

Location: Williamson County, Illinois. T6S, R3E, Sec. 35, NE 1/4, NE40, NE10- Thirty-two yards west of first small draw which crosses road (about 1/10 mile) west of NE corner of NE10. Aerial photo

вик-1и-86, 6-2-51.

Vegetation and land use: Trees

Slope and land form: 2 percent to east.

Sampled by and date: H. Wascher and J. B. Fehrenbacher. October 18, 1951.

Horizon and **Beltsville** Lab. No.

0 to 4 inches. Dark grayish brown (LOYR 4/2) silt loam, soft crumb structure. A1

511083

4 to 11 inches. Yellowish brown (10YR 5/5) silt loam, soft crumb to very weak platy A2

511084 structure.

Strong brown (7.5YR 5/6) silt loam, fragmental to granular structure. A3

Not Sampled

511086

14 to 20 inches. Strong brown (7.5%R 5/6) light silty clay loam, weak fragmental to sub-Bll

511085 angular blocky structure.

23 to 28 inches. Brown to yellowish brown and light yellowish brown (10YR 5/3 to 5/4 and 6/4) **B12** 

with iron specks of yellowish brown (10YR 5/6). Thick 10YR 7/2 coatings. Blocky tendency to

prismatic structure, silty clay loam.

30 to 36 inches. Yellowish brown (10YR 5/4) mottled with light brownish gray (10YR 6/2), iron **B21** concretions of yellowish brown (10YR 5/6), heavy silty clay loam to silty clay with waxy dark 511087

brown (7.5YR 4/4) coatings. Blocky in definite prismatic form structure.

**B22** 36 to 41 inches. Dark brown (7.5YR 4/4) mottled with pale brown (10YR 6/3) silty clay loam,

511088 very coarse blocky to massive structure.

Pale brown (10YR 6/3) mottled with dark brown (7.5YR 4/4) heavy silt loam, massive. ΒЗ

Not Sampled

Notes: About 48 inches of loess on Illinoian till. Sampled on south side of road in cut along standing timber on narrow ridge top. Broken moist colors.

Depth

(In.)

0-7

7-14

14-22

22-31

31-38

<u> 38-46</u>

Depth

(ln.)

0-7

7-14

14-22

22-31

31-38

38-46

46-50

46-50+

Horizon

Ap Al

B1 B21g

B22g

B3g

бата

Organic

carbon

a, b

Pct.

1.86

1.01

0.53

0.32

0.31

0.31

Сg

May 16, 1966

Beaucoup silty clay loam\_\_\_\_ SOIL Nos. \$63111-39-2 LOCATION Jackson County, Illinois SOIL

General Methods: 1A, 1Blb, 2A1, 2B

Sand

18.7

19.5 24.7

22.4

8.2

6.3

6Bla

Nitrogen

0.154

b.090

0.056

0.038

Total

(2-0.05) (0.05-

Silt

50.1

46.4

43.1

50.3 57.3 42.9

31.9

C/N

12

11

98

Clay

31.2

34.1 32.2

27.3 34.5

50.8

( < 0.002)

Size class and particle diameter (mm) & Coarse fragments 2A2 Sift Sand Fine Very Medium Int. 🎞 Int. 🎞 Coarse Very fine 2 - 19 | 19 - 76 **>-** 2 coarse (2-1) (1-0.5) (0.5-0.25) (0.25-0.1) (0.1-0.05) (0.05-0.02 (0.02-0.02) (0.2-0.02) (2-0.1)\_ Pct. of \_ <= 76mm Pct. of << 2 mm 3.1 2.2 2.3 24.4 0.1 0.1 0.2 15.2 25.7 42.3 24.7 43.8 0.1 21.7 2.4 0.1 17.1 47.8 0,1 19.4 0.2 22.1 2.6 27.2 0.2 2.0 20.0 23.1 49.0 0.2 12.4 28.5 0.1 1.0 6.9 28.8 36.2 0.2 1.3 30,9 tr 0.1 0.6 lo. 5 1.1 25.1 8.1 1.7 Bulk density 6ЕТЬ 602a 4 Di 4Ala 4Alđ 4Alb 4,84 4Blc 4B2 4c1 8cta Ext. Carbonate COLE Field Field-Iron 1/3-Air-1/3-15-Bar 1/3-to as ÇaCO<sub>3</sub> (1:1) Bar 15-Bar as Fe State Dry State Bar Pct. Pct. Pet 22.8 25.8 26.4 24.7 26.7 35.6 0.7 0.8 1.37 1.44 1.53 1.70 9.3 14.5 13.4 0.13 5.8 1.53 0.036 5.8 1.65 p.056 15.7 0.14 0.8 1.65 1,45 1.720.059 14.2 15.6 0.16 6.2 0.044 12.3 15.8 0.8 1.62 1.44 1.64 0.16 6.6 1.0 1.42 1.68 6.8 1.60 p.056 16.9 0.14 1.48 .27 .78 0.18 6.8 1 1.3 1.46 1,21 1.76 b.13 27.5 38.9 26.0 0.16 7.3

\_\_ LAB. Nos. 19304-19310

				İ										ŀ	
	<u> </u>	Extractal	ble bases	a 5Bla		6H2a	Cat. Ekci	. Oக்டு க		 			8D3	Base s	aturation
Depth (In.)	6 N2a.	602а Мв	6F2a Na	602a. K	Svæm	Ext. Acidity a	5A3a Sum Cations	5Ala NH <sub>4</sub> OAc	KCl- Ext. Al			Ca.	/Mg	503 Sum Catalo	
	<u></u>	<u>'</u>	1	<u>'</u>	, meq/100 g				<b></b> →					Pct.	Pct.
0~7	19.1	5.7	þ.2	<b>5.</b> 8	25.8		32.0	28.0			 ·	3	.4	81	92
7-14	19.8	7.1	b.3	þ.7	27.9	5.2	33.1	30.0				2	.8	84	93
14-22	19.0	8.0	b.4	þ.7	28.1		31.8	29.6				2	.4	88	95
22-31	17.1	8.1	Ď.5	þ.7	26.4		28.6	26.6				2	.1	92 94	99
31-38 38-46	20.3	10.4	p.7	þ.7	32.1	2.1	34.2	32.1				2	.0	94	100
38-46	25.2	13.8	p.9	<b>h.o</b>	40.9	2,1	43.0	41.4					.8	95	99
46-50	34.0c	9.94	b.8	1.1	45.8			46.4				3	-4		99

	Ratios	to Cla	y 8dl	
Depth (In.)	NH <sub>11</sub> OAc CEC		15-Bar Water	
0-7		0.02	0.43 0.46	
7-14 14-22	0.88	0.02 0.02	0.48	
22-31 31-38 38-46		0.03 0.03	0.49 0.49 0.43	
46-50	0.71	0.02	0.40	

Determined by Soil Survey Laboratory - Riverside, California. 12 kg/m² to 50 inches. (Method 6A)
NH4C1-EtCH extract. (Method 6N3a).
NH4C1-EtCH extract. (Method 6O3a).

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Mineralogy (Methods 7Al, 7A2).

Cg horizon
Well crystallized montmorillonite dominates the clay. Small amounts of mica (or illite) and kaclinite are present. Collapse of montmorillonite with potassium suggests a high negative charge. The fine silt contains moderate amounts of mica, quartz and feldspar with small amounts of kaolinite and possibly pyrophyllite. Mineralogy is montmorillonitic.

Soil type: Beaucoup Silty Clay Loam

Soil Nos.: S63 Ill-39-2

Location: Jackson County, Illinois, T8S, R4W, Sec. 31, SW 160, SW 40, NE 10, NW 2½. About 440 feet NNE at right angle from road and 100 feet west of edge of woods. About 3½ miles south and 3½ miles west to edge

of Mississippi River.

Slone and land form: Level to nearly level: Mississiphi River bottomland.

Drainage and permeability: Poorly drained with slow surface run-off; moderately permeable.

Parent material: Alluvium

Described and sammled by: G. O. Walker, H. L. Wascher, W. D. Parks, C. C. Miles, B. J. Weiss, October 22, 1963.

Horizon and Lab. Nos.

0-7 inches, black (10YR 2/1) silty clay loam; cloddy breaking to weak fine granular structure; friable LSL 19304 to firm; very dark gray (10YR 3/1) worm casts; yellowish red (5YR 4/8 and 5/8) iron concretions; common UIL 19424 roots; pH 6.5; abrupt smooth boundary.

7-14 inches, very dark gray (10YR 3/1) silty clay loam with few fine distinct yellowish brown (10YR 5/8) mottles; cloddy breaking to moderate fine and medium angular blocky structure; firm; thick continuous LSL 19305 UIL 19425 black (10YR 2/1) coatings; common roots; common fine yellowish brown (10YR 5/8) and black (N 2/) iron concretions; pH 6.5; gradual smooth boundary.

14-22 inches, dark gray (10YR 3.5/1 to 4/1) silty clay loam with few fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; moderate coarse prismatic structure breaking to moderate medium angular LSL 19306 UIL 19426

blocky structure; firm; thick continuous very dark gray (10YR 3/1) coatings; common roots; common fine yellowish red (5YR 4/8 and 5/8) iron concretions; black (N 2/) stains; pH 6.7; clear smooth boundary. 22-31 inches, grayish brown (2.5Y 5/2) silty clay loam with some very fine sand and a few fine prominent

B21g LSL 19307 yellowish brown (10YR 5/6 and 5/8) and strong brown (7.5YR 5/6 and 5/8) mottles; weak coarse prismatic structure breaking to moderate coarse angular blocky structure; firm; dark gray (10YR 4/1) coatings; UIL 19427 common roots; common worm casts; few fine yellowish red (5YR 4/8 and 5/8), red (2.5YR 4/8), and black (N 2/) iron concretions; pH 7.0; clear smooth boundary.

31-38 inches, dark grayish brown (2.5Y 4/2) silt loam to light silty clay loam with few fine prominent B22g yellowish brown (107R 5/6 and 5/8) and olive brown (2.5V 4/4) mottles: weak coarse prismatic structure LSL 19308

SOIL Nos. S51111-100-4 LOCATION Williamson County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland 511089 - 511094 \_\_\_ LAB. Nos. \_\_\_\_

		1B1b						Şize clas	s and parti	cle diamete	ır (mm) 3A	1						
		<u> </u>	Total			-		Sand		Şil	t				3B2		rse fragme	nts 3B
Depth	Horizon	Sand	Silt	Clay	Very coarse	Coarse	Medium	Fine	Very fine		Int. III	Int. II				2A2 >- 2	2 - 19	19-7
(In.)		(2-0.05)	(0.05 0.002)	( <b>c</b> 0.002)	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0.1-0.05)	0.05-0.02	(0.02- 0.002)	(0.2–0.02)	(2-0.1)		Cm		_ P	l :t. of
	ļ.,.	<del> </del>					of == 2									Pct.		76mm
0-3 3-10	A21		79.3	13.3 12.9	0.8	1.8	1.2	2.2	1.4		47.3 46.4	34.7 35.6		1		tr.		
10-19	A22	ļ	74.8	18.3	1.0	1.6	1.2	1.8	1.3		46.4	30.8				tr.		
19-25	B21 B22		57.6 54.8	39.1 41.8	0.3	0.6	0.5	1.0	0.9		37.5	21.6				-		
25-35 35-42	B22	1	61.3	34.9	0.1	0.6	0.6	1.2	1,0 1,1		36.3 39.6	20.3				] [		
	}				ļ							ļ						
		<b>†</b>															<u> </u>	1
																	<u> </u>	<u> </u>
	6Ala							Bulk densit	y.	4D1	V	ater conte	nt		4C1		рН	
Depth	Organic	Nitrogen	C/N		Carbonate			4Ale	4A]h			4B1c	482				8Clc	8Cla
(ln.)	carbon				as CaCO <sub>3</sub>	as Fe	-	3≤ bar	Oven dry	COLE		³≤ bar	15 bar		WRD		(1:1)	(1:1)
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		ксі	H <sub>2</sub> 0
0-3	1.85	ret.			FGL.	rct.	g/cc	g/cc	g/cc		rtt.	r-61.	ret.				<del>                                     </del>	4.5
3-10	0.65							1										4.4
10-19 19-25	0.22	1										<u> </u>					<del> </del>	4.5
25-35	0.18																	4.3
35-42	0.12	-		<del> </del>	<del> </del>			<del>                                     </del>						-			<u> </u>	4.4
														Ì				
	-		-									-					-	
														1				
	<u> L</u>	Extractat	ole bases	5Bla		била	C	EC	6G1d		<u> </u>		latios to cl	ву	8D3		Base sa	turation
Depth	6N2d	602b	6P2a	5Q2a		Ext.	L										5C3	5C1
(ln.)	Ca	Mg	Na	К	Sum	ecidity	5A3a Şum		Ext.			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Şum	NH₄QA
							cations	1		ļ						1	cations	Pct.
0-3	1.7	0,6	0.1	0,2	meg/100 g	12.8	15.4		<u> </u>	<u> </u>						<del>                                     </del>	17	FCI.
3-10	'						-				ļ						1	ì
10-19 19-25	1.2	1.0	0.2	0.2		9.7	12.3		-	-							21	┼
25-35	5.0	5.8	0.2	0.5		19.7	31.2										37	
35-42	-				1			1								-	╁┈─	1
	İ			-				ŀ								İ		
					∤				-			<del> </del>						<u> </u>
										ļ								
	1		<u> </u>	Clay Free	tion Analysi	3 7AIN-4	<u> </u>	<u> </u>	i	<u></u>	יאט עניקב		Ь		<u> </u>		1	ــــــــــــــــــــــــــــــــــــــ
Depth	Mt.	Cht.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite		1								
(In.)	, mr.	J	vin.	""".	"""	, vu.	, Air.	- Carposine		l								
					1							<b>L</b> # 1	4ontmarille	nite, Chl. =	chlorita 1	m = Vern	niculite mi	m mice
	-	Τ	X r	ву —	ī		<del>                                     </del>	/A3 <u></u>	1	1				ed layer, Qt				mod,
												Relative	amounts:	blank = no	t determin	ed, dash =	not detect	ed,
	<del> </del>	+	<del>                                     </del>	<del> </del>	<del> </del>	-	<del>                                     </del>	<del> </del>		1		tr. <del>–</del> tr	<b>600. X =</b> 9∏	nali, xx = m	oderate, xx	x = abund	ant, xxxx=	= domina
		ļ	ļ <u>.</u>	-		ļ	-	-		1								
						1	1											

Soil Type: Bluford silt losm.

Soil No.: S51111-100-4
Location: Williamson County, Illinois. T. 8s., R. 3E., Sec. 35, ME 1/4, ME 40, SE 10 Near NE Cor. of SE 10, 180 feet M. of bend in road. Aerial photo BHK-1H-86, 6-2-51.

Slope and land form: 1 - 2 percent.

Horizon and Beltsville Lab. No.

0 to 3 inches. Dark grayish brown (10YR 4/2) silt loam, soft crumb structure.

511089

3 to 10 inches. Yellowish brown (10YR 5/4) silt losm, soft crumb to weak platy structure. A21

511090

10 to 19 inches. Light yellowish brown (10TR 6/4) silt losm, weak platy to fragmental struc-A22

511091 ture.

B21 19 to 25 inches. Light yellowish brown (10YR 6/4) with iron stains of yellowish brown (10YR 511092

5/6) silty clay loam, moderately heavy pale brown (10YR 6/3) coatings. Prismatic breaks into

medium blocks.

25 to 35 inches. Grayish brown to light olive brown (2.5Y 5/2 to 5/3) with iron stains of yellowish brown (10YR 5/6) silty clay to clay. Very faint pale brown (10YR 6/3) coatings. Prismatic breaks into coarse blocky structure. B22 511093

35 to 42 inches. Grayish brown to light brownish gray (10YR 5/2 to 6/2) with heavy iron stains of dark yellowish brown (10YR 4/4), silty clay, medium to coarse blocky structure.

511094

SOIL Bolivia silt loca SOIL Nos. 855II1-75-4 LOCATION Pike County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551804 - 551812

		1815						Size cla	ss and parti	cie diamet	er (mm) 3A	I						
			Total		1			Sand		\$i		·			382	Coa	rse fragm	ents 3
Depth (In.)	Horizon	\$and (2-0.05)	Siit (0.05- 0.002)	Ciay (< 0.002	Very coarse (2-1)	Coarsa (1-0.5)	Medium (0.5–0.25	Fine (0.25–0.1	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02- 0.002)	Int. II (0.2-0.02)	(2-0.1)		Cm	2A2 >- 2	2 - 19	19-
				<u> </u>	·	Pc	t. of << 2	mm						<u>.</u>	1	Pct.	<del> </del> -	76mn
0-6 6-12 12-19	Ap All Al2		69.3 70.6 68.6	23.8 26.4 28.7	0.2	0.3 0.3	1.0 0.4 0.3	1.3 0.5 0.5	1.4 1.6 1.6		33.9 35.5 34.7	37.5 36.9 35.6				-		
19-22	B1	<b>+</b>	67.1	30.8	<del>-</del>	0,2	0.3	0.5	1.1		34.4	34.0		+	<del> </del>	-	+	+
26-31 26-31	B21 B22		62.2 64.0	35.6 33.7	-	0.2	0.3	0.5	1.2		33.0 36.0	30.5 29.4				-		
31-45	B23		68.5	29.7	0.1	0.3	0.3	0.3	8.0		38.5	31.0				-		T
45-53 <u>53-7</u> 0	B3 C1		71.9 74.5	27.1 24.1	:	0.1	0.1	0.2	0.6		40.8 42.1	31.7 33.4		<u> </u>	<u> </u>	<u>:</u>		L
	6Ala			1				Bulk densit	y.	401	W	ater conte	nt	T	400		pН	
Depth	Organic	Nitrogen	C/N		Carbonate	Ext. iron		4Ale	4A1h	401		4B1c	482	7	4C1		8Clc	80
(In,)	carbon		.,		as CaCO <sub>3</sub>	as Fe		⅓ bar	Oven dry	COLE		3≤ bar	15 bar		WRD		(1:1)	(1
0-6	Pct. 2.83	Pct.			Pct.	Pct,	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	Н:
6-12 12-19	2.08																	5. 5. 5.
19-22 22-26	1.00									•								5.
26-31	0.54			ļ <u>.</u>	L													5
31-45 45-53 53-70	0.28 0.19 0.11																	5 5 5
			le bases 5					EC	6G1d						8D3		Base sa	
Depth	6N2d	602b	6PZa	602a		6 <b>HI.a.</b> Ext.	١	20	9610			, R	atios to cli	** 	803		5C3	56
(ln.)	Ga	Mg	Na	К	Sum	acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext, iron	15-ber water	Ca/Mg		Sum cations	NH4
0.6	- 10 5			1 0 h	meq/100 g	300	0= 1	1						<u> </u>	-		Pct.	P
0-6 6-12 12-19	10.5 11.1 10.5	2.3 2.6 4.1	0.1 0.1 0.1	0.4		11.5	27.1 25.6 26.1										49 55 51	
19-22 22-26	11.1 11.8	5.0 6.3	0.1	0.2		11.0	27.4 28.4										60	Ť
26-31	12,1	6.6 6.8	0.1	0.3		6.9	28.3		ļ					<b>.</b>	<b>_</b>	ļ	65 67	_
31-45 45-53 53 <b>-7</b> 0	12.1 11.6 10.1	6.2 5.7	0.1 0.1 0.1	0.4		5.2 4.5	26.1 23.5 20.8										73 78	
, <u>, , , , , , , , , , , , , , , , , , </u>		,··	V.1			7.7	24.0										78	T
				Clay Fract	ion Analysis	7Alb-d		<u> </u>						<u> </u>				<u></u>
Depth (In.)	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
			7A2 ——— X-ra			<del></del> -	7:	A3				Mt. = M	ontmorillo:	nite, Chl. <del>-</del> -	chlorite, Vi	π, = Vermi	iculite, mi	= Mi
												int. — in	terstratifie	d layer, Qt	z, = quartz,	KI. — Kaol	inite	
															t determine oderate, xxx			

Soil Type: Bolivia silt loam

Soil No.: 855Ill-75-4

Location: Pike County, Illinois. ThS - R5W - Sec. 21 - SE160 - NEW - NE 10 - 90 feet So. of 1/2 sec. line fence, 18 feet So. of R.R. right-of-way fence, No. of tracks, 39 rods W. of center of road.

Vegetation and land use: Blue grass

Slope and land form: 4 percent N to S and 1 1/2 percent E to W.

Erosion: None

Drainage: Highly imperfect to moderately well.

Permeability: Moderately slow to slow.

Parent Material: 120 inches of Peorian losss over old buried soil from Loveland losss.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 19, 1955.

Horison and Beltsville Lab. No.

Ap 0 to 6 inches. Very dark brown (10YR 2/2), silt loam, moderate, fine to medium crumb 551804 structure, friable.

All 6 to 12 inches. Same as the Ap layer.

551805

Al2 12 to 19 inches. Very dark brown (10YR 2/2), silt loam, moderate, fine, subangular blocky structure, friable.

Bl 19 to 22 inches. Very dark gray (10YR 3/1), light silty clay loam, strong, fine to medium, 551807 subangular blocky structure, firm.

B21 22 to 26 inches. Very dark grayish brown (10TR 3/2), silty clay loam, coated with very dark brown (10TR 2/2) strong, fine to medium subangular blocky structure, firm.

B22 26 to 31 inches. Dark grayish brown to brown (10TR 4/2.5), silty clay loam, mottled with 551809 common, fine, distinct brown (10TR 5/3), strong, fine to medium, subangular blocky structure, firm.

B23 31 to 45 inches. Grayish brown (2.5Y 5/2), silty clay loam, mottled with common, fine,
551810 distinct, yellowish brown (10YR 5/6) and dark brown (7.5YR 4/4), coated with dark gray
(10YR 4/1), columnar in place which breaks to a moderate, coarse subangular blocky structure,
firm.

B3 45 to 53 inches. Grayish brown to dark grayish brown (2.5Y 4.5/2), light silty clay loam, 551811 mottled with many, medium, prominent brown to dark brown (10YR 4.5/3) mottles, weak, very coarse, subangular blocky structure, friable. Some (10YR 2/2) iron stains.

C1 53 to 70 inches. Grayish brown (2.5Y 5/2), silt loam, mottled with many, medium, prominent 551812 dark brown (10YR 4/3) and (7.5YR 4/4) mottles - few, fine prominent (5YR 2/2) stains.

Notes: Roots well distributed through B21 horizon. Colors refer to moist soil.

SOIL Bonnie silt loam

SOIL Nos. S63Ill-96-1 LOCATION Wayne County, Illinois

SOIL SURVEY LABORATORY Lincoln, Nebraska General Methods: 1A, 181b, 2A1, 2B

\_\_\_ LAB. Nos. \_\_\_<u>19311-19317</u>\_

May 16, 1966

	T	$\overline{}$						Size cla	ss and part	icle diamet	er (mm)	_	3A1					
			Total					Sand		Si		T	I	ľ	T	Coa	rse fr <b>a</b> gme	nts 2 A2
Depth (in.)	Horizon	Sand (2-0.05)	Silt (0.05–	Clay ( < 0.002)	Very coarse	Coarse (1-0.5)	Medium	Fine	Very fine	0.05.0.03	Int. 111	Int. II (0.2-0.02)	(2-0.1)			> 2		19-76
(111.7		(2-0,03)	0.002)	( = 0.002)	(2-1)	i	t. of < 2	(0.25–0.1)	) (U. 1-U.US)	Ų.US-U.Ų2	0.002	10.2-0.02	(2-0.1)			Pct.	PC PC	t. of 76mm
0-8	Αp	7.5	72.7	19.8	1,4	1.9	0.7	1.5	2.0	20.6	52.1	23.5	5.5	1	<del>                                     </del>	-	<del>}                                    </del>	1
8-11	ci	5.2	72.9	bo. 9	1.7	2.6	0.7	0.7		21.8	51.1	22.7	5.7			] [	1	
11-25	C2	5.7	69.6	24.7	1.8	2.1	0.5	0.7	0.5 0.6	21.4	48.2	22.4	5.1			l <u>.</u>		i
25-37	C3g	6.5	68.2	25.3	1.7	1.9	0.6	1.0	1.3	16.5	51.7		5.2			-		
37-44	CHE	5.7 5.5 5.1		29.0	1.3	1.8	0.6	1.0	1.4	14.9	50.0		4.7	ļ		_		
44-57	C5g	7.0	62.8	BO.2	1.1	1.6	0.7	1.7	1.9	17.2	45.6	20.1	5.i	İ		L		
57-70	06g	B.3	62.9	28,8	1.0	1.8	0.8	2.1	2.6	16.9	46.0	20.9	5.7			-		
	6Ala	6Bla			6E2a,	602a		Bulk densit	ty	4 Di.	 	Vater conte	int	<u> </u>			pH	a
Depth	Organic	Nitrogen	C/N		Carbonate	- m-i	4Ala	4Ald	4A1b		4B4	4Blc	4B2	4C1				8c1
(In.)	carbon		5,11	1	as CaCO <sub>3</sub>	l	Field-	1/3-	Air-	COLE	Field-	1/3-	15-	1/3-to			i	1
	a, b					as Fe	State	Bar	Dry		State	Bar	Bar	15-Bar				(1:1)
	Pct.	Pct.		<u> </u>	Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct,	Pct,	in/in				
0-8	0.83	0.086	70	1	ì	1.6	1.46	1.42	1.46	0.010	10.1		8.2	0.19	1	]	1	6.8
8-11	0.38	0.050	8	i	1	1.6	1.54	1.51	1.56	0.010	10.7	23.4	8.7	0.22	1	1	1	4.6
11-25	0.29	0.046	6	-	$\vdash$			1.44	1.48	0.010	13.4		10.3	0.18	<u> </u>	-		4.7
25-37	0.29	0.044	0		i			1.40	1.48	0.017	18.5	23.3	10.8	0.18	1			5.0
37-44 44-57	0.21		1		ŀ	1.5	1,52 1,55	1.47 1.49		0.020	19.6 19.5	23.2	12.3	0.16				5.1
57-70	0.15				tr(s)			1.50	1.65	0.024 0.032	20.2		13.8 13.0	0.14		<del> </del>	1	5.6 7.1
					- (")													,,,
		Extractat	ole bases	a. 5Bla		6H2a	Carl. Earl	o⊾Cap. a	6G1d			ſ			8D3		Base sati	uration
	6N2a	602a	6P2a	602a		Ext.	5A3a	5Ala	KC1-					1	023		5¢3	5C1
Depth (In.)	Ca	Mg	Na	ĸ	Sum	Acidity		NH, OAc							Ca/Mg		Sum Cattions	n H <sub>14</sub> OA
		<u> </u>	1	<u> </u>	meq/100 g		! 	· · · · · · · ·	>					l			Pct.	Pct.
0-8	8.4	4.8	0.3	0.2	13.7	3.4	17.1	14.7							1.8		80	93
8-11				0.2		9.9	15.2	12.4	2.9	1	ł	1	l	ì	1.6	ì	35	43
11-25	3.0	3.6	0.4	ŏ.2	5.3 7.1	9.9 11.1	15.2 18.2	14.2	3.8	1					0.8		39	50
25-37	3.9	3.4	0.8	0.2	8.3	9.5	17.8	15.1	2.7						1.1		47	55
37-44	5.2	4.5 6.4	1.4	0.2	11.3	9.0	20.3	17.5	2.5			l			1.2	ł	56	55 64
44-57	7.5	6.4	2.2	0.3	16.4		21.4	19.2							1.2	ļ	77	85
57-70	8.1	6.5	2.6	0.3	17.5	3.0	20.5	18.5							1.2		85	94
<del></del>	Ratios	to Cla	r 8m										<u> </u>					
Danth		1	<u> </u>	Γ		a.	Determ	ined a	t Soil	Surve	y Labo	ratory	- Riv	erside	, Cali	fornia		
Depth (In.)	NH <sub>14</sub> OAc CEC	Ext. Iron	15-Ban Water			ъ.	7 kg/m	<sup>2</sup> to 6	0 inche	es. (	Method.	6A)			•			
0-8 8-11	0.74	0.08	0.41															
11-25	0.57	0.06	0.42															
25-37						1												
	1 (),60	10.00	10.41		į į	i												
37-144	0.60	0.06	0.43															
37-44 44-57	0.60																	
37-44	0.60	0.05	0.42															

Soil type: Bonnie Silt Loam

Soil Nos.: S63 Ill-96-1

Location: Wayne County, Illinois, T1S, R5E, Sec. 4, NE 160, SW 40, NW 10, SW 21, 290 feet E of center of NS gravel road and 770 feet north of section center.

Vegetation and use: Wheat stubble; cropland.
Slope and land form: Level to nearly level; Skillet Fork River valley floor.

Drainage and permeability: Poorly drained with slow surface run-off; slowly permeable.

Parent material: Alluvium

Described and sampled by: G. O. Walker, J. B. Fehrenbacher, D. L. Wallace, R. E. Bourland, L. M. Reinebach, F. N. Carroll, November 14, 1963.

Horizon and Lab. Nos.

0-8 inches, dark grayish brown (10YR 4/2) silt loam with specks of light brownish gray (10YR 6/2): LSL 19311 weak, fine, crumb structure; friable; many fine iron concretions; common roots; pH 7.6; abrupt smooth UIL 19458 boundary.

8-11 inches, light gray (10YR 7/1 to 7/2) silt loam with many, coarse, distinct yellowish brown (10YR 5/4) and few, medium, distinct yellowish brown (10YR 5/8) mottles; weak, medium, platy structure; friable LSL 19312 UIL 19459 after rupture but has a compact plow pan; many fine iron concretions; fine roots; pH 5.0; abrupt smooth boundary.

11-25 inches, light gray (10YR 7/1 to 7/2) silt loam with many, coarse, distinct brown (10YR 5/3), common medium, distinct yellow (10YR 7/6) and yellowish brown (10YR 5/6) and common, medium, distinct LSL 19313 UIL 19460 brown (7.5YR 4/4) mottles; massive; friable; many, fine iron concretions; few root fillings of gray (10YR 6/1) material high in clay; pH 5.0; clear smooth boundary.

25-37 inches, gray (10YR 6/1) to light gray (10YR 7/1) silt loam with few, fine, prominent yellowish brown (10YR 5/4) and common, medium, distinct brown (7.5YR 4/4) and many, coarse, distinct brown C3g LSL 19314 UIL 19461 (10YR 5/3), yellow (10YR 7/6) and yellowish brown (10YR 5/6) mottles; massive; friable; occasional thin light gray (10YR 7/2) silt coatings in major cracks; fine root channels filled with gray (10YR 6/10 material high in clay; vesicular; many pores ranging up to 2 mm. in diameter, and many fine iron concretions; pH 5.2; gradual wavy boundary.

37-44 inches, gray (10YR 6/1) medium to heavy silt loam with some light gray (10YR 7/1); many, coarse, distinct brown (10YR 4/3) to dark yellowish brown (10YR 4/4) and few medium, prominent reddish brown (5YR 5/4), and few, fine, distinct yellowish brown (10YR 5/6 and 5/8) mottles; massive; slightly firm; LSL 19315 UIL 19462 occasional thin light gray (10YR 7/2) silt coatings in major cracks; many fine iron concretions, root channels filled with gray (10YR 6/1) material high in clay; vesicular, but less pronounced than the C3g layer; pH 5.2; diffuse smooth boundary.

C5g 44-57 inches, gray (5Y 6/1) heavy silt loam with many, coarse, distinct brown (10YR 4/3) to dark yellowish ISL 19316 brown (10YR 4/4) and common, fine, distinct, yellowish brown (10YR 5/6), and few, fine, distinct, strong brown (7.5YR 5/6) mottles; massive; slightly firm; occasional thin light gray (10YR 7/2) silt coating UIL 19463 in major cracks; many fine iron concretions becoming larger with depth; some small pores; some channel fillings of gray (5Y 5/1) material high in clay; few, fine roots; pH 5.6.

57-70 inches, gray (5Y 6/1) heavy silt loam with many, coarse, distinct brown (10YR 4/3) to dark yellowish LSL 19317 brown (10YR 4/4) and common, coarse, distinct, yellowish red (5YR 4/6) mottles; massive; slightly firm; UIL 19464 many, medium iron concretions and some soft ones; pH 6.2.

C7g 70-90 inches, gray (10YR 6/1) heavy silt loam with many, medium, distinct dark grayish brown (10YR 4/2) and dark yellowish brown (10YR 4/4) mottles; massive; slightly firm; concretions as in above layer; pH 8.0.

C8g 90-100 inches, gray (10YR 6/1) light silty clay loam with many, coarse, distinct dark yellowish brown (10YR 4/4) mottles; massive; slightly firm; concretions as in layer above; pH 8.0.

Remarks: The C7g and C8g horizons were sampled with a tube auger.

Except for some moved clay as channel fillings, there appeared to be no B-development in this profile. Even though some clods appeared fragile when dry, there was no definite evidence of the development of a fragipan. All colors are for moist conditions. Reaction determined by Truog soil test kit.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

<u>""</u>

SOIL Camden silt loca SOIL Nos. S53II1-10-4 LOCATION Champaign County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531715 - 531722

		1B1b					Size cla	ss and part	cle diamete	er (mm) 3A	1				
		Total					Sand		Si	it			382	Coa	se fragments 3BI
Depth (in.)	Horizon	Sand Silt (2-0.05) (0.05- 0.0	(= 0.002)	Very coarse (2-1)	1	Medium (0.5-0.25)	T	Very fine (0.1-0.05)	l .	Int. III (0.02- 0.002)	Int. [] (0.2-0.02)	(2-0.1)	Cm	2A2 2	2 - 19 19 - 70 Pct. of
0-4	A1 A2	10,1 71.		0.9	2.5	3.2	2.6	0.9	22.3	19.6	24.2	9.2		-	
4-10 10-13 a	A3 a.	l l		1.0	2.7	3.2	2.6	0.7	24.1	48.5	25.8	9.5			
13-17 27-21	B1	10.0 64.		0.8	2.6	3.1	2.8	0.7	21.3	43.6	22.9	9.3		-	

Soil Type: Camden silt loam

Soil No.: S53Ill-10-4

Location: Champaign County, Illinois. T.22 N., R.8 E., Sec. 21, SW 1/4, SW 40, SE 10, on north side of dead end dirt road 530 feet west of quarter-line fence, directly across road from electric power-line

pole, in 10 foot road bank with no road cut.

Vegetation and land use: Bluegrass, weeds, summe, small thorn trees.

Slope and land form: 1/2 percent to northeast.

Sampled by and date: A. H. Beavers, R. T. Odell, H. L. Wascher. September 11, 1953.

Horizon and Beltsville Lab. No.

Al 0 to 4 inches. Dark brown (7.5YR 3/2) 1/16 - 1/8 inch crumb to granular silt loss.

531715

A2 4 to 10 inches. Brown (7.5YR 5.5/4), thin platy silt loam.

531716

A3 10 to 13 inches. Yellowish brown (10YR 5/4), weak 1/4 inch subangular blocky silt loam.

531717

B1 13 to 17 inches. Yellowish brown (9YR 5/6), 1/4 inch subangular blocky light silty clay loam.

531718

B21 17 to 24 inches. Yellowish brown (9YR 5/6), 1/4 - 3/8 inch subangular blocky to matlike

531719 silty clay loss with few sand grains in lower part.

B22 24 to 32 inches. Yellowish brown (9TR 5/5), 1/4 - 1/2 inch subangular blocky silty clay loan

531720 with sand grains.

B3 32 to 36 inches. Yellowish brown (9YR 4.5/4), irregular fragmental clay losm or silty clay

531721 loss with some sand grains and few small pebbles.

Cl 36 to 75 inches. Dark brown (7.5YR 4/4), sandy to fine gravelly clay loam.

531722

C2 75 to 105 inches. Dark reddish brown (6YR 3/3), fine gravelly clay loam.

Not Sampled

Cu(D) 105 inches plus. Calcareous gravel.

Not Sampled

Notes: Located in Sangamon river basin. Material below 32 inches probably deposited primarily by waters of Bloomington stage of Wisconsin glaciation. Material above 32 inches mostly loess of Peorian age. Elevation 710 - 720 feet.

SOIL Camden silt loam

SOIL Nos. S53T11-20-3 LOCATION DeWitt County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

\_\_ LAB. Nos. \_\_\_\_531708 - 531714

	1	1816						Size clas	s and parti	cle diamet	er (mm) 3A	1						
	1		Total					Sand	oo ana porti	Şi					382	Coa	rse fragme	nts 3BI
Depth (In.)	Horizon	Sand (2-0.05)	\$ilt (0.05– 0.002)	Clay ( < 0.002	Very coarse (2-1)	i	]	Fine (0.25–0.1)	Very fine (0.1–0.05)	0.05-0.02	int. III (0.02- 0.002)	int. II (0.2–0.02)	(2-0.1)		Cm	2A2 >= 2	2 - 19	19-70
0-5	Al	20.0	67.3	12.7	0.2	1.7	t. of <= 2	10.3	2.2	28.4	38.9	35.0	17.8		ļ <u>.</u>	Pct.	· <:	6mm
5-11 11-14	A2 A3 a	17.7	67.3	15.0	0.2	1.5	5.0	9.2	1.8	27.4	39.9	33.2	15.9			-		8
14-18 18-27 27-35	B1 B21 B22	11.7 11.7 28.0	61.9 58.4 46.8	26.4 29.9 25.2	-	0.7	3.1	6.4	1.5	25.9 26.5	36.0 31.9	30.1 30.7	10.2			-		
35-44 44-54	C1 C2 a	62.2	21.0	16.8	0.1	3.2	7.6 18.5	36.3	4.1	9.3	26.6	30.3 28.7	25.4 58.1			<del>-</del>	<del></del>	-
<u> </u>		1	<u> </u>	<u> </u>	1		<del> </del>	Bulk densit	y.	<u>                                     </u>	v	Vater conte	nt			<u> </u>	pH	<u>.                                    </u>
Depth	6A1a Organic	Nitrogen	C/N		Carbonate	Ext. iron		4Ale	4A1h	4D1		4Blc	4B2		4C1		8CIc	8Cla
(In.)	carbon				as CaCO3	as Fe		⅓ bar	Oven dry	COLE	<u> </u>	⅓ bar	15 bar		WRD		(1:1)	(1:1)
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KĊI	H <sub>2</sub> 0
0-5 5-11 11-14	0.61																	5.1 5.6
14-18 18-27 27-35	0.26 0.17 0.14																	5.7 5.7
35-44	0.05																	5.0
		Extractab	ie basės Š	81a		6Ша	С	EC	6G1d	_		R	atios to cla	у	8D3		Base sat	uration
Depth (In.)	6N2d Ca	602b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		5C3 Sum cations	5C1 NH <sub>4</sub> OAc
	-		!	<u> </u>	meg/100 g			<u> </u>	 								Pct.	Pct.
0-5 5-11 11-14	5.6 4.6	1.4	tr. tr.	0.5		4.8 4.2	12.3 10.3										61 59	
14-18 18-27 27-35	8.2 10.1 8.4	4.3 5.6 5.2	0.1 0.1 0.1	0.5 0.5 0.4		5.1 5.7 5.6	18.2 22.2 19.7										72 74	
35-44 44-54	5.2	4.3	tr.	0.3		4.2	14.0										7 <u>2</u> 70	
																		,,
	1			Clay Fract	ion Analysis	7Alb-d				l								

				Clay Fract	ion Analysi	s 7Alb-d			
Depth	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite	
(ln.)			ļ						
			7A2 —— X-ra			!	_ 7	 N3— <del></del>	
	1		^.,,					, <u>-</u>	
				ļ					
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							İ		
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1			i	ı	·				

## a No analyses on these horizons.

 $\mathbf{Mt.} = \mathbf{Montmoriflonite, \ Chl.} = \mathbf{chlorite, \ Vm.} = \mathbf{Vermiculite, \ mi} = \mathbf{mica,}$ Int. = interstratified layer, Qtz. = quartz, Kl. = Kaolinite

Relative amounts: blank = not determined, dash  $\rightarrow$  not detected, tr. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant. Soil Type: Camden silt loam

Soil No.: S53Ill-20-3

Location: DeWitt County, Illinois. T.19 N., R.2 E., Sec. 17, SE 1/4, NE 40, NW 10 in wooded pasture south

of gravel pit, 120 feet west of fence on 40-rod line, and 12 feet south of fence on half line. Vegetation and land use: Bluegrass sod with scattering of small elm, locust, and other trees.

Slope and land form: 3 percent to south.

Sampled by and date: A. H. Beavers, R. T. Odell, H. L. Wascher. September 10, 1953.

Horizon and Beltsville Lab. No.

0 to 5 inches. Dark brown (7.5YR 3/2), fine crumb tending toward platy in lower part, silt

531708 loam.

5 to 11 inches. Dark brown (7.5YR 4/3), thin platy in upper part to small subangular in

531709 lower part, silt loam.

11 to 14 inches. Brown (7.5YR 5/4), 1/4 inch irregular fragmental, silt loam. А3

Not sampled

14 to 18 inches. Brown  $(7.5YR\ 5/5)$ , 1/4 - 3/8 inch subangular to nutlike, thin faint partially costed light gray (lOYR 7/2), light silty clay loam.

531710

B21 18 to 27 inches. Dark brown (7.5YR 4/4), 1/4 - 5/8 inch subangular blocky and nutlike, silty

531711 clay loam.

27 to 35 inches. Dark yellowish brown (9YR 4/4), 3/8 - 3/4 inch subangular blocky clay loam. B22

531712

35 to 44 inches. Dark yellowish brown (7.5YR 4/4), 1-2 inch irregular fragmental sandy clay

531713

44 to 54 inches. Dark brown (7.5YR 4/4) sandy loam to light sandy clay loam. This layer has œ

a very wavy lower contact with tongues up to 2 feet or more extending into calcareous gravel 531714

Cu Calcareous gravel.

Not Sampled

Notes: Located in Salt creek basin. Material above 27 inches may be mostly losss of Feorian age. Material below 27 inches probably deposited primarily by waters of Bloomington stage of Wisconsin

glaciation.

SOIL Camden silt loam SOIL Nos. S53111-29-1 LOCATION Fulton County, Illinois
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531693 - 531699

					1	ır (mm) 3A	cle diamete	s and parti	Size clas						1B}b		
igments 36	se fragm	Coar	382			it	Sil		Şand					Total			
_ ! _ Pct. of	2 - 19	2A2 >- 2	Cm	(2-0.1)	int. 🎞 (0.20.02)	Int. III (0.02- 0.002)	0.05-0.02	Very fine (0.1-0.05)	l	1		Very coarse (2-1)	Clay ( < 0.002)	Silt (0.05 0.002)	Sand (2-0.05)	Horizon	Depth (In.)
-< 76mm	_ <	Pct.		 			· · · · · · · · · · · · · · · · · · ·	<del>,</del>	mm	t. of -< 2 i	Pc1	<del></del>			-		
		-		9.3	33.4	36.3	31.2	0.9	3.7	3.9	1.5	0.2	22.3	67.5	10,2		0-5 5-11 <del>3</del> 113-152
		-		3-7 4.2	24.7 26.6	37.1 35.4	23.8 25.5	0.5	1.5	1.6	0.6	-	34.9 34.3	60.9 60.9	¥.2 ¥.8	B21 B22 B3 a	15½-22 22-31
		-		 39.0 75.1	21.2 21.0	22.8 6.4	15.1 5.9	0.9 2.8	16.8 36.9		4.7 8.8	0.1 0.1	22.2 9.8	37.9 12.3	39.9 77.9	ci cor(di)	37-41 41-57
<del></del>	ρН		4C1	nt	ater conte	٧	4D1	y.	Bulk densit			j				6Ala	
ic 8C1	8Clc			4B2	4Blc			4A1h	4Ale		Ext. iron	Carbonate		C/N	Nitrogen	Organic	Depth
:1) (1:1	(1:1)		WRD	15 bar	⅓ bar		COLE	Oven dry	⅓ bar	1	as Fe	as CaCO <sub>3</sub>				carbon	(ln.)
Ci H <sub>2</sub> C	KCi		in/in	Pct.	Pct.	Pct.		g/cc	g/cc	g/cc	Pct.	Pct.			Pct.	Pct.	
	(1:		WRD	15 bar	⅓ bar	Pct.		Oven dry	⅓s bar	g/cc	as Fo	as CaCO <sub>3</sub>		C/N	-	Organic carbon Pct.	

Soil Type: Camden silt loam

east and 50 feet west of telephone poles. Vegetation and land use: Burned-off grass and weeds.

Soil No.: S53Ill-29-1

Cul(D1)

531699 Cu2(D2)

Not Sampled

Location: Fulton County, Illinois. T.7 N., R.2 E., Sec. 18, NW 1/4, SW 40, SW 10 on low ridge in 6 foot

rach had color of

Slope and land form: 2 percent to east. Sampled by and date: A. H. Beavers, R. T. Odell, H. L. Wascher. September 8, 1953. Horizon and Beltsville Lab. No. 0 to 5 inches. Very dark grayish brown (10YR 3.5/2), 1/8 inch crumb to indistinct thin platy 531692 in lower part, silt loam A2 5 to 11-1/2 inches. Brown (7.5YR 5/4), thin platy in upper to indistinct 1/8 - 1/4 inch 531693 granular to subangular in lower, silt loam. B1 11-1/2 to 15-1/2 inches. Brown (7.5TR 5/4), 1/8 - 1/4 inch subangular blocky, silty clay 531694 loam. **B**21 15-1/2 to 22 inches. Brown (7.5YR 4/4), 1/4 inch subangular blocky, silty clay loam. 531695 22 to 31 inches. Brown (7.5TR 4/4), 1/2 inch subangular blocky to mutlike with few iron-B22 531696 manganese coatings of black (10YR 2/1) silty clay loam. 31 to 37 inches. Yellowish brown (9YR 5/5), 1 inch irregular subangular to nutlike with few 531697 iron-manganese splotches, light silty clay loam. Cl. 37 to 41 inches. Yellowish brown (9YR 5/4), irregular fragmental with an occasional ironmanganese splotch, light silty clay loam with sand. 531698

57 to 70 inches plus. Medium to coarse loamy sand to sand.

Wisconsin glaciation. Elevation 520-540 feet.

Notes: Located in Spoon river valley. Material above 37 inches may be mostly losss of Peorian age,

41 to 57 inches. Dark yellowish brown (9YR 4/4), medium sandy loam to light sandy clay loam.

below 37 inches probably deposited primarily by waters of Shelbyville and/or Bloomington stages of

SOIL Camden silt loam SOIL Nos. 853II1-51-7 LOCATION Lawrence County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

\_\_\_ LAB. Nos. \_\_\_\_\_531741 - 531748

DIL SUKVE	Y LABORATO	кү <u>ве</u>	LAVIIIE,	Marylar	14					LAB	l. Nos	732,7	- /3	-				
		1B1b	Total					Size clas	s and parti	cle diamete Si	er (mm) 3A	1			3B2	I Con	rse fragme	2B
Depth (in.)	Horizan	Sand (2-0.05)	Silt (0.05–	Clay	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25–0.1)	Very fine (0.1–0.05)		Int. III	Int. II (0.2–0.02)	(2-0.1)		Cm	2A2 >= 2	2 - 19	19-
0-4 <del>3</del>	A1 a	-	( 0.002)	! 	1 12 17	Pci	t. of << 2	mm		<u> </u>	0.002)	<u></u>				Pct.		t. of _ '6mm
4 <del>3</del> -10 10-14 14-17	A2 A3 a B1 a		57.2	10.2	0.1	0.4	1.0	15.2	15.9	29.2	28.0	56.5	16.7			<u>-</u>		
17-23 23-29	B21 B22	36.1 28.2	42.2 46.3	21.7 25.5	-	0.1	0.5	16.5 10.4	19.0 17.4	23.6 28.0	18.6 18.3 22.9	55.7 54.0 50.0	17.1 10.8 5.2			- -		
29-36 36-47 47-62	B23 C1 C2	17.6 31.3 15.0	56.3 47.2 66.6	26.1 21.5 18.4	=	0.1 0.1 0.1	0.2 0.2 0.6	4.9 11.0 4.7	12.4 20.0 9.6	33.4 31.2 28.2	16.0 38.4	60.3 41.3	11.3 5.4			=	ļ <u>-</u>	
	CA1-	<u> </u>	l	<u> </u>				Bulk densit	y.	4D1	   v	Vater conte	nt		4C1		pH	
Depth (In.)	6A1a Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe		4A1e ⅓sbar	4A1h Oven dry	COLE		4Blc ⅓ bar	4B2 15 bar		WRD		8Cic (1:1)	8C1 (1:1
	Pct.	Pct.			Pct.	Pct,	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	H <sub>2</sub> (
0-4½ 4½-10 10-14	0.54																	6.3
14-17 17-23 23-29	0.17 0.14																	5.: b.:
29-36 36-47 47-62	0.11 0.09 0.08																	14. 14.
		Extracta	ble bases	5B1a		6Юа	] c	EC	6G1d		<u> </u>		Ratios to cl	ay	803	<u> </u>	Base set	uration
Depth (In.)	6N2d Ca	602b Mg	6P2a Na	6Q28 K	Sum	Ext. acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		5C3 Sum cations Pct.	5C NH <sub>4</sub> 4
0-4½ 4½-10 10-14	3.0	1.4	tr.	0.2	meg/100 g	4.0	8.6		<del>.</del>								53	10
14-17 17-23 23-29	4.1 3.6	2.2	tr.	0.3		6.5 10.1	13.1 17.0										50 40	
29-36 36-47 47-62	3.3 2.8 2.9	2.9 3.0 3.0	0.2 0.2 0.2	0.3 0.2 0.2		10.7 9.1 8.5	17.4 15.3 14.8					ļ					38 40 42	_
				Clay Frac	tion Analysi	is 7Alb-d									<u> </u>			
Depth (in.)	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite				a 1	(o anal	yses o	n thes	e hori	isons.	
	ļ <del>-</del>	<u> </u>	7# X-r	12 ay	<u> </u>	<u> </u>	<b>-</b>	/A3		-				nite, Chl. = ed layer, Qt				= mic
					<u> </u>	_				-		Relativ	e amounts:	blank = no nall, xx = m	t determina	d, dash =	not detect	
					<u> </u>													
		<u> </u>			<u> </u>		ļ	ļ		-								
	1	1	I	1	1	1	1	1	1	1								

Soil Type: Camden silt loam.

Soil No.: S53Ill-51-7

Location: Lawrence County, Illinois. T.4 N., R.11 W., Sec. 1, NE 1/4, NW 40, SW 10, on north side of gravel road about 440 feet east of center of road corner (L-corner), which is also 1/2 line, and 72 feet west of power line pole on south side of road, in 2 foot road bank with one foot road ditch cut.

Vegetation and land use: Brush cover mostly poison ivy, blackberries and small oak and maple sprouts.

Slope and land form: 1 percent to east and west.

Eampled by and date: J. B. Fehrenbacher, R. H. Ruhe, and H. L. Wascher. September 16, 1953.

Horizon and Beltsville

Al 0 to 4 1/2 inches. Very dark grayish brown to dark brown (10YR 3/2 - 3/3), crumb silt loam 531740 with few fine sand grains.

A2 4 1/2 to 10 inches. Dark yellowish brown (10YR 4.5/4) weak thin platy, silt loam with few 531741 grains of fine sand.

A3 10 to 14 inches. Brown (7.5YR 5/5), indistinct weak platy silt loam with some fine sand.

B1 14 to 17 inches. Strong brown (7.5YR 5/6), 1/4 inch subangular blocky light silty clay loam 531743 with some fine sand.

B21 17 to 23 inches. Strong brown (7.5YR 5/6), 1/4 - 3/8 inch subangular clay loam or silty clay 531744 loam with fine sand.

B22 23 to 29 inches. Dark brown (7.5YR 4/5) 1/4 - 1/2 inch subangular blocky silty clay loam with 531745 some fine sand.

B23 29 to 36 inches. Dark brown (7.5XR 4/5) specked yellowish brown and dark yellowish brown (10XR 5/4), 3/8 - 3/4 inch subangular blocky coated yellowish brown (10XR 5/4), silty clay loss with fine sand.

Cl 36 to 47 inches. Strong brown (7.5YR 5/6) specked with iron-manganese 2/2, irregular frag-531747 mental to 1/4 inch platy, light clay loam or light silty clay loam with fine sand.

C2 47 to 62 inches. Strong brown (7.5YR 5/6) specked and streaked very dark brown (7.5YR 2/2), 531748 massive breaking into irregular fragmental, heavy loam or heavy silt loam with fine sand.

Cu  $\,$  62 inches plus. Fine sandy loam. Not Sampled

Notes: Taken on moderately wide terrace in Wabash river valley. Material to 62 inches may or may not be partly loss of Peorian age mixed with water deposited material from Wisconsin glaciation. Elevation about 445-450 feet. Profile very dry to 40 inch depth.

SOIL Camben silt loam SOIL Nos. S53II1-51-8 LOCATION Lawrence County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531749 - 531757

		1B1b						Size clas	s and parti	cle diamete	ır (mm) 3A	1						
	l		Total					Sand		Si	t	I	T		382		rse frågme	nts 3
Depth	Horizon	Şand	Sift	Clay	Very	Coerse	Medium	Fine	Very fine		Int. III	Int. II				2A2	2. 10	,,,
(ln.)		(2-0.05)	(0.05-	( < 0.002	(2-1)	(1~0.5)	(0.5-0.25)	(0.25-0.1)	(0.1-0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)		Cm	<b>&gt;</b> 2	2 - 19	19-
	ł		0.002)	<u>.                                    </u>	''	 Pc1	! !. of <= 2 :	i mm	l	 	0.002)	! 		j	}	Pct.		t. of _ 76mm
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5-12	A2	15.5	72.5	12.0	<b>-</b> . '	0.2	0.5	5.0	9.8	36.0	36.5	49.7	5.7		1	-		
12-15 15-18	A3 a		-	-	ļ		<b> </b>		<b>├</b>	ļ		ļ		ļ	<del> </del>		<u> </u>	<del> </del>
18-23	B1 =	15.3	57.3	27.4	-	_	0.2	5.0	10.1	27.0	30.3	41.6	5.2	ì	1	_		
23-30	B22	21.0	51.0	28.0		-	0.2	7.4	13.4	21.7	25.8	45.3	7.6		1	1 -	1	
30-40	B23	10.1	60.5	29.4	1 -	-	0,1	1.4	8.6	31.2	29.3	41.1	1.5	<del> </del>	t			t
40-48	<b>B</b> 3	4.3	66.5	29.2	-	<b>-</b>	0.1	1.6	2.6	26.9	39.6	30.7	1.7	ĺ	ĺ	-	l	ì
<u> 18-60</u>	CI.	19.5	55.2	25.3	<b>├</b> -	<u></u>	0.1	5.5	13.9	29.3	25.9	18.3	5.6	<u> </u>	<u> </u>		<u> </u>	
			İ										ļ					
	6A1a	_			<del>-</del>			Bulk densit	y	4D1	W	later conte	int		4G1		pH	<del>!</del>
Depth	Organic	Nitrogen	C/N		Carbonate		1	4Ale	4Alh	ļ		481c	4B2		ł	ł	8CIc	80
(ln.)	carbon				as CaCO3	as Fe		3≰ bar	Oven dry	COLE		1-is bar	15 bar	}	WRD	[	(1:1)	(1:
				1											in/in		KCI	H <sub>2</sub>
0-54	Pct.	Pct.		<del> </del>	Pct.	Pct.	g/cc	g/cc	g/cc	_	Pct.	Pct.	Pct.	<del>                                     </del>			NG!	'"²
0-5 <u>}</u> 5 <u>}</u> -12	0.60													}				6.
12-15 15-18	<del> </del>			Ļ.—			ļ	ļ	ļ				-	<b></b> _	<u> </u>	<u> </u>	ļ	+
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23-30	0.13			↓												<u> </u>		4.
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40-48 48-60	0.10		ł	ł	1			<u> </u>					}	}	1		1	4.
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		Extractat	le bases !	5B1a		6HLa	C	EC	6G1d				latios to cla	y	803		Base sat	uratio
Depth	6N2d	602b	6P2a	6Q2a		Ext.											5C3	50
(ln.)	Ca	Mg	Na	K	Sum	acidity	5A3a Sum	ł	Ext.			CEC Sum	Ext, fron	15-bar weter	Ca/Mg	}	Sum	NH4
	İ				1	,	cations	1	"				""	, """			cations	İ
0-5 <del>2</del>	<u> </u>				meq/100 g				<del></del>					<u> </u>	<u> </u>	<u> </u>	Pct.	Pc
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وتلله		1.8	100										Į.	·			, ,	
5-12	4.9	1.8	0.2	0.2		3.1										ı		
51-12 12-15 15-18	4.9	1.8	0.2	0.2		J. A						_			<del>                                     </del>	<del>_</del>		$\vdash$
51-12 12-15 15-18 18-23	5.0	2.1	0.2	0.3		9.1	16.6			_							45	
54-12 12-15 15-18 18-23 23-30	5.0	2.1	0.1 tr.	0.3		9.1 10.1	16.6 17.8										43	
54-12 12-15 15-18 18-23 23-30	5.0 4.7 5.7	2.1 2.7 3.6	0.1 tr.	0.3 0.3		9.1 10.1 10.8	16.6 17.8 20.4										43	
54-12 12-15 15-18 18-23 23-30 30-40 40-48	5.0 4.7 5.7 5.8	2.1 2.7 3.6 3.7	0.1 tr. tr.	0.3 0.3 0.3		9.1 10.1 10.8 11.5	16.6 17.8 20.4 21.3										43 47 46	
12-15 15-18 18-23 13-30 10-48	5.0 4.7 5.7	2.1 2.7 3.6	0.1 tr.	0.3 0.3		9.1 10.1 10.8	16.6 17.8 20.4										43	
54-12 12-15 15-18 18-23 23-30 30-40 40-48	5.0 4.7 5.7 5.8	2.1 2.7 3.6 3.7	0.1 tr. tr.	0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3										43 47 46	
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3	ion Analysis	9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2	Cibbrite				8 N		yses o	n these	hor1:	43 47 46 48	
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8	2.1 2.7 3.6 3.7	0.1 tr. tr.	0.3 0.3 0.3 0.3 0.3	ion Analysis	9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3	Gibbsite				a 18		ymes o	n these	hori:	43 47 46 48	
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2	Gibbsite				Mt. = N	o anal	nite, Chl. ==	chlarite, V	n. = Vermi	43 47 46 48	= mid
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt. ≈ N Int. ≈ N	o anal	nite, Chl. ∞ d layer, Qt	: chlarite, Vi z. ≈ quartz,	n, = Vermi Kl, ≈ Kaol	43 47 46 48 2005.	
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlorite, Vi z. = quartz, it determine	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	ed,
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlarite, Vi z. ≈ quartz,	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	od,
7½-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlorite, Vi z. = quartz, it determine	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	ed,
52-12 12-15 15-18 18-23 23-30 30-40 40-48 48-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlorite, Vi z. = quartz, it determine	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	od,
2-12 2-15 5-18 8-23 3-30 9-40 9-48 8-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlorite, Vi z. = quartz, it determine	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	ed,
2-12 2-15 5-18 8-23 3-30 0-40 0-48 8-60	5.0 4.7 5.7 5.8 5.0	2.1 2.7 3.6 3.7 3.4	0.1 tr. tr. tr. 0.1	0.3 0.3 0.3 0.3 0.3 0.3		9.1 10.1 10.8 11.5 9.4	16.6 17.8 20.4 21.3 18.2					Mt N Int N Reletive	o anal	nite, Chl. ∞ d layer, Qt blank = no	: chlorite, Vi z. = quartz, it determine	m, = Vermi Kl, ≈ Kaot d, dash = i	43 47 46 48 2005.	ed,

Soil Type: Camden silt loam.

Soil Wo.: 853Ill-51-8

Location: Lawrence County, Illinois. T.4 N., R.12 W, Sec. 21, SE 1/4, NE 40, NW 10, on east side of gravel road about 570 feet south of L-road corner which is also 1/2 line, about 100 feet north of power line pole on west side of road, also about 42 feet north of large oak tree and 78 feet south of hackberry tree, at corner of field and lane to old abandoned house, in 2 foot road bank with 1 foot road cut

Vegetation and land use: Thin stand of grass.

Slope and land form: 1 1/2 percent to NE and SW.
Sampled by and date: J. B. Fehrenbacher, R. H. Ruhe, and H. L. Wascher. September 17, 1953.

**Boltsville** Lab. No.

0 to 5 1/2 inches. Dark grayish brown (10YR 4/2), 3/16 inch crumb, coarse silt loam. 531749

**A2** 

5 1/2 to 12 inches. Brown (10YR 4/3), thin platy silt loam.

531750

A3 12 to 15 inches. Strong brown (7.5YR 5.5/6), thin platy silt loam.

531751

15 to 18 inches. Strong brown (7.5YR 5/6), 1/4 - 3/8 inch subangular blocky light silty clay

531752 losm.

B21 18 to 23 inches. Strong brown (7.5YR 5/6), 1/4 - 1/2 inch subangular with few thin iron-

manganese splotches, silty clay loam. 531753

B22 23 to 30 inches. Strong brown (7.5YR 5/6) splotched iron-manganese, very dark brown (7.5YR 2/2), 1/2 - 1 inch subangular to mutlike some elongated up to 2 inches, silty clay loam, few 531754

fine sand grains.

B23 30 to 40 inches. Strong brown (7.5YR 5/6) prominent iron-manganese splotches of very dark 531755

brown (7.5YR 2/2), 1 - 1 1/2 inch subangular to fragmental light silty clay loam.

40 to 48 inches. Yellowish brown (9YR 5/6) mottled strong brown (7.5YR 5/6) and light ВЗ

531756 brownish gray (10YR 6/2) and specked iron-manganese concretions very dark brown (7.5YR 2/2), 2 inch subangular often elongated to 4 - 5 inches coated reddish brown (5YR 4/4).

C1 48 to 60 inches. Strong brown (7.5YR 5/6) spotted very dark brown (7.5YR 2/2) and light brownish gray (10YR 6/2) light clay losm or light silty clay losm with fine sand. 531757

Taken on low terrace in Embarrass river basin. Material to 23 inches may be mostly losss of Feorian age, that below 23 inches is probably mostly deposited by water from till of Shelbyville, Cerro Gordo and Champaign stages of Wisconsin glaciation. Elevation about 435 feet.

SOIL Camden silt loam SOIL Nos. S53II1-66-2 LOCATION Mercer County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531700 - 531707

OIL SURVE	Y LABORATO	RY <u>Be</u>	tsville,	Marylan	ια					LAB	. Nos	23170	0 - 53	T-101				
	1	1B1b	Total					Size clas	s and parti	cle diamete					3B2	Con	rse fragme	intr 3
Depth (in.)	Horizon	Sand (2-0.05)	Silt	Clay ( <b>&lt;</b> 0.002	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5–0.25)	Fine (0.25-0.1)	Very fine (0.1–0.05)		int. 111	Int. II (0.2–0.02)	(2-0.1)		Cm	2A2 >- 2	2 - 19	19-
	<u> </u>		7 0.002/	· · · -			t. of -< 2		<u></u>	,	0.002)					Pct.		76mm
0-5 5-8 8-13	A21) A22)	10.9	72.5	16.6	0.1	1.7	2.2	2.9	4.0	39.7	32.8	45.3	6.9		<u> </u>			
13-16 16-21 21 <b>-27</b>	B22 B21 B1 a	8.2 13.5	62.9 56.5	28.9 30.0	0.1 0.1	1.1	2.4	2.4 4.6	2,2	32.0 28.1	30.9 28.4	35.3 31.9	6.0 11.3		_	-		
27-31 31-38 38-43	B3 a Cl Cul	50.1 81.1	32.0 11.2	17.9 7.7	0.2	6.8 21.8	19.7 29.4	20.0 26.7	3.4 2.9	18.1 5.9	13.9 5.3	27.9 18.1	46.7 78.2			<u>-</u>		$\perp$
<u> </u>	ļ			<u> </u>	ļ			Bulk densit			1	Vater conte	<u> </u>				pH	<u> </u>
Depth	6A1a Organic	Nitrogen	C/N		Carbonate	Ext. iron		4Ale	4A1h	4D1	<b>—</b> '	4B1c	482	1	4C1		8C1c	8C1
(In.)	carbon		.,,,		as CaCO <sub>3</sub>	as Fe		35 bar	Oven dry	ÇOLE		¥s bar	15 bar		WRD		(1:1)	(1:
<del>-</del>	Pct.	Pct.		<u> </u>	Pct,	Pct,	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/ia	<u> </u>	KCI	H2
0-5 5-8 ) 8-13)	0.28				_					  -								6.
13-16 16-21 <u>21-27</u>	0.18 0.15																ļ	5. 5.
27-31 31-38 3 <b>8-4</b> 3	0.06 0.05	_																4. 5.
		Extracta	ble bases	5B1a		6Н1а	, c	EC	6G1d	1			Ratios to ch	y	8D3	<u> </u>	Base sa	turatio
Depth (In.)	6N2d Ca	602b Mg	6P2a Na	6Q2a K	Sum meg/100	Ext. acidity	5A3a Sum cations		Ext.	:		CEC Sum	Ext. iron	15-bar water	Ca/Mg		5C3 Sum cations Pct.	NH <sub>4</sub> 0
0-5 5-8 ) 8-13)	6.6	0.9	tr.	0.2	meq/100	2.3	10.0				-						77	
13-16 16-21 21-27	10.3 9.2	3.5 1.4	0.1 0.1	0.4		4.6 6.8	18.9 17.9										76 62	
27-31 31-38 38-43	4.3 2.0	0.6	0.1 tr.	0.2 0.1		6.0 2.0	11.2 5.2	<u> </u>				-					¥6 62	ļ.,
				Olay Fran	tion Analys	200.4												<u></u>
Depth	Mt.	Chl.	Vm.	Mi.	tion Analys Int.	Otz.	KI.	Gibbsite		1		a. N	o anal	yses o	n thes	e hori	isons.	
(In.)	MIL.	Cim.	7A	12	l int.	ųu.						M1 =	Montmerille	nite. Chl. =	- chlorite. \	m. – Verr	niculite, mi	i = mic
		1	X-r	<u>-, —                                     </u>				/A3 — <u>=</u>		1		int. =	Interstratific	ad layer, Qt	z. == quartz	, Ki. – Ka	plinite	
-		-				-	-	-		-		Relativ	a amounts: ace, x = sn	blank = no nall, xx = m	t determina oderate, xx	ed, dash ~ ex = abund	- not detect lant, xxxx =	ted, = domí
_	<u> </u>	-	-		_					-								
	1	1	1	1	1	1	1		1									

Soil Type: Camden silt loam

Soil No.: 853111-66-2

Location: Mercer County, Illinois. T.14 N., R.5 W., Sec. 10, NW 1/4, SW 40, SW 10, on north side of gravel road in 3 foot road bank with 2 foot cut, 100 feet east of center of T-road (also fence to

north) and 25 feet west of electric power line pole.

Vegetation and land use: Bluegrass and weeds.

Slope and land form: Probably 1/2 percent.

Sampled by and date: A. H. Beavers, R. T. Odell, H. L. Wascher. September 9, 1953.

Horizon and Beltsville Lab. No.

0 to 5 inches. Dark yellowish brown (10YR 3/4), 1/32 - 1/10 inch crumb in upper to indistinct

531700 thin platy in lower part, silt loam.

A21 5 to 8 inches. Yellowish brown (10YR 5.5/4), thin platy to indistinct granular, silt loam.

531701

A22 8 to 13 inches. Morizon same as above.

13 to 16 inches. Yellowish brown (10YR 5.5/5), 1/4 - 3/8 inch irregular subangular blocky, R1

531702 light silty clay loam.

16 to 21 inches. Yellowish brown (10YR 5.5/6), 1/4 - 3/8 inch rounded nutlike to subangular blocky with thin light gray (10YR 7/2) coatings, silty clay loam. B21

531703

01. Ja 07 fashasu - Kallendah beree 120- - 1/1

7 T No --- --- :

**B**3 27 to 31 inches. Yellowish brown (10YR 5/6), 1/2 - 3/4 inch irregular subangular blocky, few 531705 faint iron-manganese splotches, silty clay losm with some sand grains.

31 to 38 inches. Dark brown (7.5YR 4/5), compact, fragipan-like tending to break into 1/2 531706 inch thick platy clay loam.

Cul 38 to 43 inches. Brown (7.5YR 4/4), compact, slightly cemented loamy sand. 531707

43 to 48 inches. Brown (7.5YR 4/4) sticky clay loam splotched very dark gray (N/3) iron-Not Sampled manganese.

Cu3 48 to 54 inches. Variegated silt loam.

Not Sampled

SOIL Nos. S53Ill-56-9 LOCATION McHenry County, Illinois SOIL Camben silt loam

	OIL SURVE	Y LABORATOR	KY <u>Be</u>	LSVIIIE,	waryiaii	<u> </u>					LAE	. Nos	/3-1/	8 - 53					-
Part		·	TIRIN						Size clas	s and part	cle diamete	er (mm) 3A	1			-			
				Total		Ι''''										3B2	Coa	rse fragme	nts :
Column   C		Horizon				li			Fine									2 - 19	19-
15-52   26-2   26-2   26-2   3-3   3-9   3-3   0-1   0-7   1-1   1-1   0-8   26-7   35-3   27-9   3-3   3-5   1-2   22-32   28-2   12-5   3-5   3-5   27-9   3-3   3-5   1-2   22-32   28-2   28-2   3-7   3-3   3-2   26-7   3-7   3-3   3-5   3-7   3-5   3-7   3-2   3-7   3-2   3-7   3-3   3-5   3-7   3-7   3-5   3-7			(2-0.05)	(0.05 <u>–</u> 0.002)	( < 0.002)	(2-1)		l	l	(0.1-0.05)	0.05-0.02	0.002)	(0.2–0.02)	(2-0.1)		Um	Pct.		t. of
15-52   26-2   26-2   26-2   3-3   3-9   3-3   0-1   0-7   1-1   1-1   0-8   26-7   35-3   27-9   3-3   3-5   1-2   22-32   28-2   12-5   3-5   3-5   27-9   3-3   3-5   1-2   22-32   28-2   28-2   3-7   3-3   3-2   26-7   3-7   3-3   3-5   3-7   3-5   3-7   3-2   3-7   3-2   3-7   3-3   3-5   3-7   3-7   3-5   3-7	0-32		12.96	69.5	17.6	8.0	3.1	4.2	3.5	1.3	27.3	42.2	29.7	11.6			-		Γ
15-62 B21	3 <del>}</del> -5¥				١.			i .				_	_						
22-32   32-26   33-0   32-30	エーフ		9.5	72.0	18.5	0.4	1.6	3.6	3.0	0.9	32.2	39.8	33.8	8,6				-	┝
32-38   B3 or CL   70.3   8.9   20.8   5.8   25.6   25.2   27.2   0.9   0.8   1.6   7.7   69.4   9   9						0.1					26.7	35.3	27.9				tr.	1	
15-k9   Cal   90.3   2.k   7.3   3.2   16.1   2.9   27.2   0.9   0.6   1.6   7.7   39.4   9	22-32					0.2					24.5		26.9					<u> </u>	↓_
Carbonals   Carb	32-38																		
Depth (in.)   Cardon   Nitrogen   C/N   Cardonale   Est. Iron   s CaCO <sub>3</sub>   s f e   last	45-49	Cul	90.3	2.4	7.3	3.2	16.1	12.9	27.2	0.9	0.8	1.6	7.7	89.4			9		L
Depth (in.)   Caracter (in.)   Caracte																			
Depth   Consider   C		1							Bulk densit	y.	401	¥	Vater conte	nt		401		рН	_
Carbon   C	Denth		Nitmaa	C/N	1	Carbonete	Fut iron		4814	AAIh	1 401		481c	482	1	-04		8Clc	80
Pet.   Pet.			ogen	""	1				İ	j	COLF	1			1	WRD	ł		i
O-3\$ 3.77 33-55 0.71	*** **			1	1			1	>≼ ber	Oven dry		'	3≨ bar	15 bar	]	{ <b></b>		(1:1)	(1
11-5-22			P¢t.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pet.		in/in		KCI	Н;
11-5-22	0-3 <del>\$</del>	3.77	i						]									1	5
15-22   0.36   0.08   0.07	35-55 35-11	0.71	<u> </u>										ļ						5
Second   S	15-22															ļ			5.
Extractable bases 581a   CEC   GG1d   Retires to clay   SD3   Base and cettions   CEC   GG1d   CEC   CEC   Ext.   15-bar   Ca/Mg   Sum   Cettions   All   CEC   CEC   Ext.   SA3   Sum   Cettions   All   CEC   CEC   Ext.   SA3   Sum   Cettions   All   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   SA3   Sum   Cettions   CEC   CEC   Ext.   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   Cettions   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   Ext.   Sum   CEC   CEC   CEC   Ext.   Sum   CEC   CEC   CEC   CEC   CEC   CEC   CEC   CEC   CEC   Cat.   CEC   CEC   CEC   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec   Cec			-	ļ <u>-</u>	<del> </del>			<del> </del>		<del> </del>	1		<del>                                     </del>				1	+	5
Depth (In.)   Ca   Mg   Na   K   Sum   acidity   Sum   Sum   Sum   Sum   Cathons   Al   CEC   Ext.   15-bar   water   Ca/Mg   Sum   Sum   Cathons   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Sum   Cathons   Cathons   Sum   Cathons   Cathons   Sum   Cathons   Cathon	52-30 45-49																		5.
Depth (in.)	-		Extrectal	le bases	5B1a		6W a	C	EC	6G1d				Ratios to ck	ay	8D3		Base sa	turati
(in.) Ca Mg Na K Sum acidity S		CHOL			Τ			1		1	l					1		5C3	5
Sum   Sum   Solid		6NZQ	6028	1	1		EXt.	5A3a		Ext.		l	CEC	Ext.	15-bar	Ca/Mg	1		
13.1   3.1   0.1   0.8   map to 1   12.1   29.2   58   33-52   5.5   1.8   0.2   0.3   7.4   15.2   51   1.15   15.2   10.9   6.8   0.1   0.4   7.4   25.6   71   68   22-32   10.1   7.5   0.2   0.4   8.5   26.7   68   32-38   5.9   4.5   0.1   0.3   6.8   17.6   61   64   64   64   64   64   64   6	(10.)	Ca	Mg	Na	K		1			Al			Sum	iron	water			cations	NH,
Signature   Sign	0-34	13.1	3.1	0.1	8.0	meq/100 g	12.1	129.2		<del></del>	1			<del></del>	<del> </del>				Ť
11-15   10.9   6.8   0.1   0.4   7.4   25.6	3-5-5			- <b></b> -		1	<b></b>	", ",	1				[	1		1	1	-	
15-22   10.9   6.8   0.1   0.4   7.4   25.6     68   22-32   10.1   7.5   0.2   0.4   8.5   26.7     68   32-38   5.9   4.5   0.1   0.3   6.8   17.6   61   64   64   64   64   64   64   6	⅓-11 11-15	5.5	1.8	0.2	0.3		7.4	15.2	-	ļ	ļ	+	ļ		-	-	<del> </del>	51	╄
32-38   5.9   4.5   0.1   0.3   6.8   17.6   6.4	15-22																	71 68	
Clay Fraction Analysis 7Alb-d  Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  TA2  A No enelyses on these horizons.  Depth (in.)  TA2  X-ray  TA3  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, mi lnt. = interstratified layer, Qtz. = quartz, Ki. = Kaolinite					1	+		<u> </u>	<del> </del>	<del>                                     </del>	<b></b>	t -	<u> </u>	<del> </del>	t	<u> </u>	1		T
Depth (in.)  Mt. Chi. Vm. Mi. Int. Qtz. Ki. Gibbsite  D Undecomposed organic matter in sand fractions.  7A2  7A3  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, milet. = interstratified layer, Qtz. = quartz, Ki. = Kaolinite																			
Depth (In.)  Mt. Chi. Vm. Mi. Int. Qtz. Kl. Gibbsite  D Undecomposed organic matter in sand fractions.  7A2  X.ray  7A3  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, milet, = interstratified layer, Qtz. = quartz, Ki. = Kaolinite																		]	
(in.)  7A2  7A3  Mt. = Montmorillonite, Chi. = chlorite, Vm. = Vermiculite, mi lnt. = interstratified layer, Qtz. = quartz, Ki. = Kaolinite				L	Clay Frac	tion Analysi	s 7Alb-d	<u> </u>		<del> </del>			a. N	o anal	yses o	n thes	e bori	sons.	_
X-ray 743 - Mt. = Montmorillonne, Cni. = enhorite, viii. = verimiculie, iii lnt, = interstratified layer, Qtz. = quartz, Ki. = Kaolinite		Mt.	Cht.			Int.	Qtz.	KI.	Gibbsite								c matt	er in	<b>al</b> .
Int. = interstratified layer, Qtz. = quartz, Ki. = Kaolinite		L	l .			<u>.                                    </u>	<u> </u>	J	1 A3	4									= m
Relative amounts: blank - not determined, dash - not determined, das			r==		Ť		_ <del></del>	1	T -	i –	1		lat. =	Interstratifie	ed layer, Qt	z. = quartz	, Ki. 🛥 Kas	olinite	
									1				Relativ	e amounts:	blank - no	t determin	ed, dash -	not detect	ed,

į.	1								
				Clay Fract	ion Analysi	s 7Alb-d			
Depth	Mt.	Cht.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite	
(Int)									
	L.	ļ	7A2 X-ray		l	 	7	A3	
			1			, -			
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		- <del>-</del>			<u> </u>	<del>                                     </del>			
		1							
	<del>  -</del>								
1	1	I	I		1	<u> </u>		<u> </u>	

Relative amounts: blank  $\leftarrow$  not determined, dash  $\leftarrow$  not detected, tr.  $\leftarrow$  trace, x = small, xx = moderate, xxx - abundant, xxxx = dominant.

Soil Type: Camden silt losm.

Soil No.: S53Ill-56-9

Location: McHenry County, Illinois. T.45 N., R.7 E., Sec. 4, NE 1/4, NE 40, SE 10, in wooded pasture, 6 feet north of fence along south side of pasture and about 240 feet west of center of gravel road on very low ridge.

Vegetation and land use: Bluegrass sod.

Slope and land form: 1-1/2 percent to east and west.

Sampled by and date: L. J. Bartelli, B. W. Ray, and H. L. Wascher. September 24, 1953.

Horizon and Beltsville Lab. No.

0 to 3 1/2 inches. Very dark brown (10YR 2/2), crumb to soft gramular, silt loam.

531758

3 1/2 to 5 1/2 inches. Dark yellowish brown (10YR 3/4) mixed with filled worm channels of A21 531759 very dark brown (10YR 2/2), weak platy silt loam.

422 5 1/2 to 11 inches. Yellowish brown (10YR 5/4), weak platy silt loam.

531760

R1 11 to 15 inches. Dark yellowish brown (9YR 4/4), 1/8 - 3/16 inch subangular light silty clay 531761 losm.

B21 15 to 22 inches. Dark yellowish brown (9YR 4/4), 1/8 - 3/8 inch subangular to nutlike, silty 531762 clay losm.

22 to 32 inches. Dark yellowish brown (9YR 4/4), 1/4 - 1/2 inch subangular to nutlike, faces B22 531763 splotched iron-manganese very dark brown (7.5YR 2/2) silty clay loss with grains of sand.

B3 or C1 32 to 38 inches. Dark brown (7.5YR 3/4) splotched very dark brown 2/2, breaking into 531764 irregular fragments, sticky clay loam (sand mostly coarse).

Cul 38 to 45 inches. Dark brown (7.5YR 4/4), loamy fine to medium sand. Not Sampled

Cul 45 to 49 inches. Horizon same as above. 531765

052 49 to 51 inches. Dark brown (7.5YR 4/4) sandy clay losm.

Not Sampled

Cu3 51 to 72 inches plus. Noncalcareous loamy sand to sand. Not Sampled

Notes: Taken in rather broad flat outwash plain in Nippersink drainage basin. Material above 32 inches may be partly or mostly losss of Peorian age, that below 32 inches probably was deposited by waters from a segment of the Valparaiso stage of Wisconsin glaciation. Elevation 860 - 870 feet. Profile very dry to 30 inch depth when sampled.

SOIL Camden silt loam SOIL Nos. S53111-56-10 LOCATION McHenry County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531766 - 531774

	T	1B1b						Size clas	s and parti	cle diamete	r (mm) 3A	l						
			Total					Sand		Si					3B2	Coar	se fragme	nts 3Bi
Depth	Horizon	Sand	Silt (0.05-	Clay ( < 0.002)	Very coarse	Coarse (1-0.5)	Medium	Fine	Very fine	0.05.0.02	Int. III	Int. II	(2.0.1)		Cm	2A2 >- 2	2 - 19	19-76
(In.)		(2-0.05)	0.002)	( 0.002)	(2-1)		(0.5–0.25) c. of << 2 i		(0.1-0.03)	0.05-0.02	0.002)	(0.2–0.02)	(2-0.1)		Cili	Pct.	Pc -= 7	t. of 76mm
	A3 a	5.2	75.2	19.6	0.4	1.3	1.5	1.1	0.9	29.4	45.8	30.7	4.3			•		
15-18 18-24 24-31	B1 a B21 B22	3.7 3.3	63.3 62.7	33.0 34.0	0.1	0.5	1.1	1.0	1.0	30.5 29.8	32.8 32.9	31.8 31.3	2.7 2.3			-		
31-37 37-44	B23 B3 a	7.5	60.2	32.3		0.9	2.6	2.4	1.6	29.9	30.3	32.4	5.9			-		
44-50	CJ.	11.1	64.4	24.5	0.1	1.4	3.5	3.5	2.6	35.5	28.9	39.6	8.5			-		
			<u> </u>				1	Bulk densit				ater conte					-"	<u> </u>
	6Ala					1				4D1					4C1		ρH I	_
Depth (in.)	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe		4Ale ⅓ bar	4A1h Oven dry	COLE		481¢ ¥sbar	4B2 15 bar		WRD		8Clc (1:1)	8C1a (1:1)
	Pct.	Pct,			Pet.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/ln		KCI	H <sub>2</sub> O
9-4 <del>3</del> 43-11 <del>3</del> 113-15	1.10																	6.1
15-18 18-24 24-31	0.19																	5.4 5.2
31-37	0.07																	5.0
37-44 44-50	0.09																	5.2
		Extractal	ole bases !	Bla		6Hla	l ci	EC	6G1d			R	atios to cla	ly	803		Base sat	turation
Depth	6N2d	602b	6P2a	6Q2a		Ext.									i		5C3	5C1
(In.)	Ca	Mg	Na	K	Sum	acidity	5A3a Şum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum cations Pot	1
0-4출 4출-11출	Ca -₹ 7-9	2.8	0.1	0.8	Sum meq/100 g		Şum								Ca/Mg			1
0-4	7.9	2.8	0.1	0.8		6.2	Sum cations 17.8								Ca/Mg		cations Pct. 65	Pct.
0-45 45-115 115-15 15-18 18-24 24-31 31-37	7-9	2.8	0.1	0.8		6.2	Sum cations								Ca/Mg		cations Pct.	1
0-4½ 4½-11½ 11½-15 15-18 18-24 24-31	7.9 14.7 13.4	2.8 6.6 5.7	0.1	0.8		6.2 8.5 10.2	Sum cations 17.8 30.4 30.1								Ca/Mg		65 72 66	1
0-45 45-115 15-15 15-18 18-24 24-31 31-37 37-44	7.9 14.7 13.4 14.4	2.8 6.6 5.7 6.0	0.1 0.1 0.1 0.1	0.8 0.5 0.7 0.6 0.5	meq/100 g	8.5 10.2 9.9 7.6	30.4 30.1 31.0								Ca/Mg		65 72 66 68	1
0-45 45-115 115-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4	2.8 6.6 5.7 6.0	0.1 0.1 0.1 0.1	0.8 0.5 0.7 0.6 0.5		8.5 10.2 9.9 7.6	30.4 30.1 31.0	Gibbsite				Sum	iron	water	n these	a hori	72 66 68 64	1
0-43 43-113-15 15-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3					Sum	iron	water	n these		72 66 68 64 2008.	Pct.
0-45 45-115 115-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3	Gibbsite				Sum  Sum	iron  Sanal	yses of		m Verm	72 66 68 64 sculite, mi	
0-45 45-115 115-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3					A. No.	iron  O anal  Iontmorillo Interstratifie	water  yeas Ol nite, Chl. = d layer, Qt: blank = no	n these	m Verm Kl. = Kaol d. dash =	cations Pct. 65 72 66 68 64 64 culite, milinite not detecte	Pct.
0-45 45-115 115-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3					A. No.	iron  O anal  Iontmorillo Interstratifie	water  yeas Ol nite, Chl. = d layer, Qt: blank = no	n these	m Verm Kl. = Kaol d. dash =	cations Pct. 65 72 66 68 64 64 culite, milinite not detecte	Pct.
0-45 45-115 115-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3					A. No.	o axal.	water  yeas Ol nite, Chl. = d layer, Qt: blank = no	n these	m Verm Kl. = Kaol d. dash =	cations Pct. 65 72 66 68 64 64 culite, milinite not detecte	Pct.
0-45 45-115 15-18 18-24 24-31 31-37 37-44 44-50	7.9 14.7 13.4 14.4 9.2	2.8 6.6 5.7 6.0 4.0	0.1 0.1 0.1 0.1 tr.	0.8 0.5 0.7 0.6 0.5	meq/100 g	6.2 8.5 10.2 9.9 7.6	30.4 30.1 31.0 21.3					Mt M Int. = Ir Relative tr. = tra	o axal.	water  yeas Ol nite, Chl. = d layer, Qt: blank = no	n these	m Verm Kl. = Kaol d. dash =	cations Pct. 65 72 66 68 64 64 culite, milinite not detecte	Pct = mica

Soil Type: Camden silt loam.

Soil No.: S53Ill-56-10

Location: McHenry County, Illinois. T.45 N., R.5 E., Sec. 7, NE 1/4, NE 40, SE 10, in small pasture on east side of gravel road, 8 feet east of road fence and 25 feet south of fence along north side of

pasture, also about 165 feet west of section line fence along east side of pasture.

Vegetation and land use: Bluegrass sod.

Slope and land form: 1 percent to north and northeast.

Sampled by and date: L. J. Bartelli, B. W. Ray, and H. L. Wascher. September 25, 1953.

Morizon and Beltsville Lab. No.

Al O to 4 1/2 inches. Very dark grayish brown (10YR 3/2), crumb to thin platy, silt loam.

531766.

A2 4 1/2 to 11 1/2 inches. Very dark grayish brown (10YR 3.5/2), thin platy, silt loam.

531767

531771

A3 11 1/2 to 15 inches. Yellowish brown (10TR 5/4), weak platy to 1/4 inch irregular fragmental,

531768 silt loam.

B1 15 to 18 inches. Yellowish brown (10YR 5/5), 1/8 - 1/4 inch subangular blocky light silty

531769 clay loam.

B21 18 to 24 inches. Yellowish brown (10YR 5/4), 1/8 - 1/4 inch subangular blocky silty clay

531770 loam.

B22 24 to 31 inches. Brown (10YR 4/3) mottled light brownish gray (2.5Y 6/2) and iron-manganese

concretions dark reddish brown (5YR 3/2), 1/4 - 1/2 inch subangular, silty clay loam.

31 to 37 inches. Brown and dark vellowish brown wixed (10YR.4/4 and 5/3) mottled iron-

silty clay losm with sand grain.

B3 37 to 44 inches. Yellowish brown and pale brown and dark yellowish brown mixed (10YR 5/4,

531773 5/6 and 6/3), 1 - 2 inch blocky, light silty clay loam with fine sand.

Cl 44 to 50 inches. Light brownish gray and pale brown (10YR 6/2 and 6/3) mottled iron-531774 manganese yellowish brown (10YR 5/6), irregular fragmental light silty clay loam with medium and.

Cl 50 to 67 inches. Horizon same as above.

Not Sampled

67 inches plus. Coarse sandy loam to 75 inches on coarse loose sand,

SOIL Clarence silt loam SOIL Nos. S48II1-99-5 LOCATION Will County, Illinois LAB. Nos. 481127 - 481130 SOIL SURVEY LABORATORY Beltsville, Maryland

	LABORATO										3. Nos							
		1B16	Total					Size clas	s and parti	cl <del>a</del> diamete Si		1			3 <b>B</b> 2	T Com	se fragme	nto 3
B		54	Silt	Ct	Very	Coarse	Medium	Fine	Very fine	<del> </del>	Int. 133	Int. II		]		ZA2		
Depth (In.)	Horizon	Sand (2-0.05)	(0.05-	Clay ( < 0.002)	1				(0.1-0.05)	0.05-0.02			(2-0.1)		Cm	> 2	2 - 19	19-
	1	-	0.002)	<u> </u>			t. of -< 2			<u></u>	i (0.002)		<u>_</u>		1	Pct.		t. of 6mm
0-11	Al		32.8	35.4	0.8	2.1	2.3	4.1	2.5		39.2	18.4				1		
11-16 16-29	B1 B2		40.6 34.8	49.7 57.2	1.3 0.5	1.5	1.6	3.0	2.3	1	31.8 28.6	12.9 9.9		ļ	1	12		
29+	C		43.4	48.4	1.0	1.2	1.1	2.4	2.5		35.2	12.1				2		
	<u>.</u>								<u> </u>									
	6Ala	<del>                                     </del>		6A3a	<u> </u>	<u> </u>		Bulk densit	y	401		ater conte	nt	<u> </u>	461		ρН	
Depth	Organic	Nitrogen	C/N	Organic	Carbonate	Ext. iron		4Ale	4A1h	701		4B1c	482				8Clc	80
(fn.)	carbon			Matte H <sub>2</sub> O <sub>2</sub>	as CaCO <sub>3</sub>			¥ ber	Oven dry	COFE		≯ bar	15 bar	 	WRD		(1:1)	(1:
	Pct.	Pct.	j	Pet.	Pct.	Pct.	g/cc	g/cc	<b>E</b> /cc		Pct.	Pct.	Pct.	_	in/in	l <u>_</u> _	KCI	Hz
0-11 11-16				3.2														6. 6.
16-29			<u> </u>	0.4	<u> </u>	<u> </u>			ļ				Ļ	ļ		ļ		7.
29+				0,2														7.
					1		! [											
		Extractat	pie bases	5B1a		6H2a	Č	EC	6G1d			F	tatios to cla	y	803		Base sat	uratio
Depth	6N2d	602b	6P2a	6Q2a	ĺ	Ext.	Ĺ					1		}		ļ	5C3	50
(in.)	Ca	Mg	Na Na	K	Sum	acidity	5A3a Sum cations		Ext. Al		ı	CEC Sum	Ext. iron	15-bar water	Ca/Mg	ļ	Sum cations	NH40
	-	T		<del></del>	meq/100 g	<u> </u>		<del></del>	1				<b> </b>				Pct.	Pct
	ļ			<u> </u>														_
								•										
				Clay Fract	tion Analysi	s 7Alb-d												
Oapth (in.)	Mt.	Chi.	Vm. 7A:	Mi.	Int.	Qtz.	K1.	Gibbsite										
	<del>-</del>	<u>,                                     </u>	X-ra		<u>.</u>	·	7	A3	<del>  -</del>						- chlorite, V z. == quartz,			= mic
		ļ			<u> </u>										t determine oderate, xx			
												-						
	-	+	├	<del> </del>			<u> </u>		├									

Soil Type: Clarence silt loam
Soil No.: S48T11-99-5
Location: Will County, Illinois. SW160 SE40 SW10, Sec. 2 T.43N R.12E.
Slope and land form: 2 percent
Sampled by and date: Paul T. Veale, 1948.

Horizon and Beltsville Lab. No.

0 to 11 inches. Very dark gray to dark gray (10YR 3/1 - 4/1) moist, friable granular silt A1 481127

loam.

11 to 16 inches. Breaks into dark gray, dark grayish brown, and dark yellowish brown (10YR 4/1, 4/2 and 4/4) moist, heavy silty clay to silty clay loam. Massive structure.

481128

B2 481129 16 to 29 inches. Breaks into gray (10YR 5/1) moist, silty clay. Blocky structure 1/2 to 3/4 inch in diameter.

29 inches plus. Blends into light gray (10YR 7/1) moist, heavy silty clay calcareous till. Blocky structure 1/2 to 3/4 inch in diameter. c 481130

SOIL Clarksdale silt loam SOIL Nos. S55111-1-5 LOCATION Adams County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 551813- 551820

					_						r (mm) 3A1				200		t-	-4
			Total		<u> </u>			Sand		Silt					382	2A2	rse fragme	nts 36
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05 0.002)	Clay ( <b>~</b> 0.002)	Very coarse	Coarse (1-0.5)	Medium (0.5–0.25)	Fine (0.25=0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02–	(nt. <b>11</b> (0.2–0.02)	(2-0.1)		Cm	<b>&gt;&gt;</b> 2	2 - 19	19-1
	ļ		0.002)	l' .	(2-1)		. of << 2 i			1	0.002)					Pct.		t. of 76mm
0-8	Alp		81.0	15.4	0.2	0.8	0.6	0.5	1.5		40.5	42.3						-
8-15 <u>15-21</u>	A2		77.7 75.9	18.6 19.5	0.1	0.8	0.7 0.8	0.6	0.8	ł	41.2 39.5	38.2 37.5				-		1
21-28	B21	!	56.5	41.4	0.1	0.5	0.3	0.4	0.8		32.6	25.0				-		
28-35	B22a	i	57.0	40.7	0.1	0.5	0.3	0.4	1.0		33.7	24.4				-		
<u>35-42                                    </u>	B22b B3	<del> </del> -	62.3	36.0 30.4	0.1	0.6	0.3	0.3	0.4		36.8 39.5	26.0 29.0	-			- <del>-</del>		
55+	čí			23.6	0,2		0.4	0.4	0.4		47.3	27.8				-		_
	6A1a							Bulk densit	<i>y.</i>	4D1	. W	ater conte	nt		4C1		pН	T
Depth (In.)	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext. iron as Fe	i	4Ale ⅓ bar	4A1h Oven dry	COLE		4B1c ⅓ bar	4B2 15 bar		WRD		8GIc (1:1)	8C:
_	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	H <sub>2</sub>
0-8	1.46				1		}									1	1	4. 5.
8-15 15-21	0.72																	5.
21-28	0.50		<u> </u>															5.
28-35 35-42	0.36 0.25																ļ	5. 5.
42-55 55+	0.16																	5. 6.
				_						_								
		Extractat	ole bases (	Bla		6нца	С	EC	6G1d			F	etios to cla	у	803		Base sat	turatio
Depth	6N2d	602ь	6P2a	6Q2a		Ext.			_								5C3	50
(in.)	Ca	Mg	Na	K	Sum	acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum cations Pct	NH <sub>4</sub>
0-8	11.9	2.5	0.1	0.2	meq/100 g	3.2	17.9	<del></del>					-				82	Po
8-15 15-21	8.6	2.6	0.1	0.2		6.5	18.0				:	}					64 65	
21-28	13.5	10.2	0.5	0.5		9.2	33.9										73	
28-35 35 <b>-</b> 42	13.8 12.8	11.1	0.7	0.6		8.6	34.8 31.8	1									75	İ
42-55	11.7	9.4	0.8	0.5		5.2	27.5						-				81 82	
55+	9.0	7.1	0.6	0.3	-	3.7	20.7	<u> </u>									OZ	-
<u></u> -		<u></u>		<u></u>											Ĺ			
m		T	T		tion Analysi			and the	Γ									
Depth (In.)	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
	-	<del>'</del>	. 7A X-ri		T	<u> </u>	- 7	A3	<u> </u>			Mt. = I	Anntmorillo	nite, Chl. =	: chlorite, V z. == quartz,	m. = Verr	niculite, mi olinite	i = Mir
																		had
	<u> </u>		<u> </u>		<u> </u>	1	<u> </u>	<u> </u>		ł		Relative tr. = tr	e amounts: ece, x = sm	olank — no ali, xx — m	t determine oderate, xx	eo, dash = x = abund	= not detect lant, xxxx =	.ea, ∴ domi
		-						1					-					
	1	1		1	1	1	}	1	I	ı								
	l .							l		l								

Soil Type: Clarksdale silt loam

Soil No.: S55Ill-1-5

Location: Adams County, Illinois. T3S - R6W - Sec. 12 - SE160 - SW40 - SE 10 - 12 rds. north of c. of

Blacktop road - also due north of 3rd highline pole E of 1/2 line.

Vegetation and land use: Corn field

Slope and land form: 1 percent

Erosion: None

Drainage: Imperfect

Permeability: Moderately slow

Parent Material: 95 inches of Peorian loess on buried profile - probably Loveland loess.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 19, 1955.

Horizon and Beltsville Lab. No.

0 to 8 inches. Very dark brown (10YR 2.5/1.5) silt loam, weak fine, crumb structure. Alp

551813 Friable.

8 to 15 inches. Same color and texture as above, very weak, fine subangular blocky structure.

551814 Friable.

15 to 21 inches. Very dark gray to dark gray (10YR 3.5/1) silt loam with a few, fine 551815

prominent hard iron concretions, weak, fine subangular blocky structure. Friable.

21 to 28 inches. Yellowish brown (10YR 5/6 and 5/8), heavy silty clay loam, mottled with grayish brown and brown (10YR 5/2 and 5/3) mottles, moderate, fine subangular blocky B21 551816

structure with many flat cleavage plains, sticky. Dark clay skins.

28 to 35 inches. Gray to grayish brown (10YR 5/1.5) silty clay loam, mottled with many fine, distinct yellowish brown (10YR 5/4 and 5/6) mottles, weak, coarse, prismatic structure which B22a 551817

breaks to a strong, coarse, blocky structure. Sticky. Vertical krotovina holes filled with

black organic clay. Many fine, long, dark streaks.

B22b 35 to 42 inches. Same as the B22a.

551818

42 to 55 inches. Dark brown (7.5YR 4/4), light silty clay loam, mottled with many fine, distinct previous and brown (10VR 5/1 and 5/3) mottles, week occurs motions which breaks to a week В3

551819

SOIL TYPE Clarksdale LOCATION Christian County, Illinois

silt loam

SCIL NCS. S60III-11-1 LAB. NOS. 14274-14283

	***************************************	1Bla			CLE SIZ		UTION (in					1141 <b>114164</b> 44444444444
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAL CLASS
		2-1	1-0.5		0, 25-0, 10		0.05-0.002	< 0.002	0.2.0.02	Q92-Q9 <b>02</b>	· ·	
0-7	Z	0.2a	0.7a	0.6b	1.0b	1.1b	78.0	18.4	33.9	45.7		
7-12	Ap	0.4a	1.0a	0.00	1.0b	0.95	73.6	22.4	30.4	44.6	_	
12-15	<b>3</b>	0.9a	1.0a	0.6ъ	0.85	0.85	66.5	29.4	26.8	40.9	-	
15-20	<u>.</u>		0.4a	0.3a	: :	0.8a	58.1	39.4	22.1		-	
20-26	<u>•</u>	0.32			0.7a		: -	40.6	•	37.2	-	
	2	0.3a	0.48	0.3a	0.7a	0.7a	57.0	1 - 1 - 1	21.5	36.6	-	
26-33		0.3a	0.4a	0.3a	0.5a	0.8a	60.9		23.7	38.3	-	
33-39		0.2a	0.3a	0.2a	0.4b	0.7b	69.2		28.7	41.4	•	
39-49	<b>1</b>	0.2c	0.3c	0.2c	0.6d	0.8d	77.9		35.8	43.2	_	
	Cl	0.2c	0.2c	0.1c	0.3d	0.7d	81.6	16.9	38.8	43.7	-	
55-65.	IC2	<u></u>	0.le	O•3e	1.3e.	<u>l</u> , <u>3</u> e	80 . 4		38,1	44.4		mer jegener
8Cla	6Gla	6Elc		INIC MA		6Cla		<u>Bull</u>	k Densi	Lty		4B2
	1	Carbon	1	i	<u>.</u>	Ext.			ĺ			L
pН	KC1-	ate as	DRGANIC	NITRO-	0.00	Iron	Field-			Cra.		15-Bar
		Ca.CO3	CARBON	GEN	C/N	as Fe	4134			4Alc	4AIn	
1,1	me/100g	% <u>f</u>		. %		%	% W.	g/cc	% W.	g/cc	g/cc	96
5.7	<b>-</b>			0.122	12	0.8	7.4				1.42	7.6
5.0	0.4		0.69	0.065	11	0.9	10.1	1.53	24.2	1.45	1.54	10.0
5.3	0.1		0.81	0.077	10	1.2		Ì	İ			13.1
5.4	0.1		0.74	0.073	10	1.3						18.4
6.1	ļ		0.62	0.061	10	1.5	18.2	1.60	30.0	1.40	1.68	19.6
6.7		-	0.44			1.7			-		•	18.5
7.2	į	Tr.	0.32			1.3			İ			15.2
7.8	į	10	0.20		i	1.3	ļ					10.2
7.9		10	0.12		•	1.3	18.8	1.58	25.8	1.54	1.60	8.7
7.7			0.11	; ; ;		Ω7	Base S				i Ley <b>Shi</b>	. 0.4
5Ala		EXTRAC	TABLE				<del></del>	<del>, , , , , , , , , , , , , , , , , , , </del>	Ratio	es to c		1 000
CATION	6 <b>N2</b> b	602b	6Юа	6P2s	692a	<u> </u>	on	L a-	NT77. OA	<b>.</b>	Water	
EXCHANGE CAPACITY	Ca	Mg	н	Na	ĸ	Sum	NH <sub>1</sub> OAc		NH <sub>4</sub> OAc		at	
NH <sub>14</sub> OAc		_	ŧ	! 100	ļ		CEC	Cation		Iron	15 Atm.	Ca/Mg
<del></del>			olents per		,		% 5CI		¶	:		
3	10.3	2.2	6.7	Tr.	0.2	19.4	89	65	1.77	.043	-41	4.7
15.2	7.9	3.3	8.6	Tr.	0.3	20.1	76	57	.68	.040	.45	2.4
Į.	10.7	6.4	8.2	0.1	0.4	25.8	86	68	.69	.041	-44	1.7
	14.6	10.7	9.0	0.1	0.6	35.0	96	74	.68	•033	•47	1.4
	7	12.7	6.5	0.2	0.6	36.1	100	82	•73	.037	.48	1.3
27.1	15.0	12.8	4.4	0.2	0.5	32.9	105	87	• 74	.046	.50	1.2
23.5	1	1	į	0.2	0.4				.81	•045	.52	ĺ
16.0	į			0.2	0.3			1	.80	.065	.51	
12.5				0.2	0.2				-74	.077	.51.	
13.4			]	0.2	0.2			į	.81	.042	.51	
_				İ		į	1	İ	į	•	-	
a. Me	ny Fe-	Mn nod	ules.	İ	į	ļ			•	İ	•	
		e-Mn n			Į					1		1
		Mn nod			carbo	nate no	dules.				į	
c. Ma	MTA LC=				,			:	•			
c. Ma	w Fe-M	h nodu		Prace	carbon	ate nod	iles.	ŧ	1			į
d. Fe	v Fe-N	n nodu	les.		carbon	ate nod	les.					
d. Fe e. Tr	v Fe-M	h nodu rbonat	les. e nodu		carbon	ate nod	iles.					
d. Fe e. Tr f. No	re-M rce ca carbo	n nodu	les. e nodu Lay.	Les.	carbon ethod		les.			18 P. C. C. C. C. C. C. C. C. C. C. C. C. C.		

Soil type: Clarksdale silt loam

Soil Nos. : S60111-11-1 Location: Christian County, Illinois; TL3N, R3W, Section 12, SE160, SE40, NW10, 145 feet south and 315 feet east

of center of turn-in road at northwest corner of NW10.

Parent material: Deep loess on Illinoian till. Drainage: Somewhat poorly.

Classification: Gray-Brown Podzolic intergrading to Brunizem. Slope: 0 to 1/2 percent. Physiography: Upland Illinoian till plain. Vegetative cover: Red clover.

Described by: F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, J. F. Steinkamp, D. E. Phillips and

V. G. Link, October 13, 1960.

Horizon and Lincoln Lab. No.

0 to 7 inches. Very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) moist, silt loam with silt concentrations of dark grayish brown (10YR 4/2) up to 5-mm. thick; dry color grayish brown (10YR 5/2); Ap 14274

weak fine granular structure; friable; common fine pores; pH 6.0; abrupt smooth boundary.

7 to 12 inches. Dark gray (10YR 4/1) to very dark gray (10YR 3/1) 70 percent and grayish brown (10YR 5/2) to dark grayish brown (10YR 4/2) 30 percent moist, silt losm mottled with few fine distinct dark yellowish A2 14275

brown (10YR 4/4); weak medium platy structure; friable; few fine pores; dry color light brownish gray

12 to 15 inches. Brown (10YR 4/3) moist silty clay loam with few fine prominent grayish brown (2.5Y 5/2)

mottles; strong medium to fine angular blocky and subangular blocky structure; firm; predominant colors, dry, of ped surfaces range from grayish brown (10YR 5/2) to gray (10YR 6/1) with discontinuous patches of very dark gray (10YR 3/1) to dark gray (10YR 4/1) clay films; interior of peds yellowish brown, dry; thick continuous very dark gray (10YR 3/1) clay films (3/1 color of clay films more dominant than 4/3 of ped interiors); few fine pores through clay films and few fine iron concretions; pH 5.8; clear smooth boundary.

14276

SOIL SURVEY LABORATORY Lincoln, Nebr. February 1964 SOIL TYPE Clarksdale LOCATION Christian County, Illinois silt loam SOIL NOS. <u>\$60111-11-2</u> LAB. NOS. 14284-14292 PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 lBla. 2A2 DEPTH HORIZON COARSE COARSE MEDIUM FINE SAND VERY FINE SAND TEXTURAL CLASS > 2 SILT CLAY 2-1 1-0.5 0.5-0.25 0.25-0.10 0.10-0.05 0.05-0.002 < 0.002 0.2-0.02 0.02-0.002 0.4a 0.9a 0.6a 0.8b 0.6a 0.9a 0.5a 0.7b 0.6a 0.7a 0.4a 0.6b 1.0b 81.3 15.0 35.0 0.7b 76.1 20.5 30.6 0.7b 71.8 25.2 27.9 47.7 46.5 0-7 Ap 7-11 A2 11-16 BL

Erosion: None.

Soil type: Clarksdale silt loam

Soil Nos. : S60111-11-2

Location: Christian County, Illinois; Tl3N, R3W, Section 12, SE160, SE40, NW10, 310 feet south and 200 feet east of

center of turn-in road at northwest corner of NW10.

Parent material: Deep loess on Illinoian till.

Drainage: Somewhat poorly. Slope: 0 to 1/2 percent. Classification: Gray-Brown Podzolic intergrading to Brunizem.

Hysiography: Upland Illinoian till plain. Wegetative cover: Red clover.

Described by: G. O. Walker, C. E. Downey, J. B. Fehrenbacher, F. J. Carlisle, V. G. Link, J. F. Steinkamp, and D. B. Phillips, October 14, 1960.

Horizon and

Lincoln Lab. No.

O to 7 inches. Dark grayish brown (10YR 4/2 moist) silt loam with some 10YR 5/2 coated with lots of grainy Ap 14284 10YR 7/2, dry, silt; weak medium granular structure; friable; color when dry is light brownish gray (10YR 6/2) with many 1-mm. patches of 10YR 7/1; few fine pores; many fine 10YR 3/2 iron concretions;

pH 6.0; abrupt smooth boundary.

7 to 11 inches. Mixed grayish brown (10YR 5/2) 60 percent and dark grayish brown (10YR 4/2) 40 percent silt 14285 loam with areas of 10YR 3/2 clay concentrations which appear to be clay films in some cases; weak medium

to fine platy structure; friable; when dry, about 50/50 107R 6/2 and 10YR 7/1 with 7/1 predominantly on surfaces of aggregates; few fine pores and many fine 10YR 3/2 iron concretions; pH 5.8; clear smooth boundary. 11 to 16 inches. Dark brown (10YR 3/3 moist) light silty clay loam with few fine faint 10YR 4/4 mottles and 14286

with 10YR 5/2 silt coats and 10YR 3/2 clay films; strong fine to medium angular to subangular blocky structure; firm; dry color of ped surfaces ranges from 10YR 5/3 to 10YR 6/3 to 10YR 7/1; the 6/3 to 7/1 colors are predominant; 7/1 colors are on coatings of blanched silt; 10YR 5/3 films are evident on surfaces;

common fine pores and common fine lOYR 3/2 iron concretions; pH 5.0; clear smooth boundary.

16 to 20 inches. Brown to dark brown (10YR4/3 moist) heavy silty clay loam with few fine prominent 5Y 5/2 B21 14287 mottles; moderate medium prismatic breaking to moderate fine angular blocky structure; firm; moderately thick 10YR 3/2 clay films on both vertical and horizontal faces and numerous root tracks or impressions;

SOIL SURVEY LABORATORY Lincoln, Nebr. February 1964 SOIL TYPE Clarksdale LOCATION Christian County, Illinois silt loam SOIL NOS. S60III-11-3 LAB. NOS. 14293-14301 PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) 3A1 1Bla 2A2 HORIZON COARSE COARSE MEDIUM SAND FINE > 2 SILT CLAY 1-0.5 0.5-0.25 0.25-0.10 0.10-0.05 0.05-0.002 < 0.002 0.2-0.02 0.02-0.002 2-1 0.3a 0.6a 0.5a 0.7b 0.2a 0.7a 0.5a 0.6b 0.2a 0.7a 0.5a 0.7a 80.0 16.9 42.2 39.1 73.2 24.0 31.5 42.8 1.0b 0-7 Ap 7-10 A2 10-14 B1 0.86 0.6ъ 28.1 70.1 43.0 0.7a

Soil type: Clarksdale silt loam

Soil Noc : S60111-11-3

Location: Christian County, Illinois; T14N, R3W, Section 20, NW160, SW40, SW10, 438 feet north and 423 feet east of

southwest corner of SW10, which is center of junction of east-west road and private road running north on

section line.

Parent material: Thick loss. Drainage: Somewhat poorly.

Classification: Gray Brown Podzolic intergrading to Brunizem. Slope: 1/2 percent to east. Erosion: None.

Hysiography: Loess covered Illinoian till plain.

Vegetative cover: Soybeans

Described by: F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, J. F. Steinkamp, and D. B. Phillips,

October 14, 1960.

lincoln Lab.No.

Ap 0 to 7 inches. Grayish brown (10YR 5/2 dry) and very dark gray (10YR 3/1 moist) silt loam with few small patches of grayish brown (10YR 5/2 moist); weak medium granular structure; friable when moist; common fine very dark grayish brown (10YR 3/2) iron concretions; pH 6.0; abrupt smooth boundary.

7 to 10 inches. Mixed very dark gray (10YR 3/1) and dark gray (10YR 4/1) silt loam with few fine distinct brown (10YR 4/3) and common fine faint grayish brown (10YR 5/2) mottling; dry color is dark gray (10YR 4/1) with many patches, commonly 1-mm. across, of light gray blanched silt; weak medium platy breaking to strong fine angular blocky structure; friable when moist; some of the very dark gray (10YR 3/1 moist) colors are clay films which are slightly grainy or degraded; many fine very dark grayish brown (10YR 3/2) iron concretions; few fine pores; pH 5.8; clear smooth boundary.

Bl 10 to 14 inches. Dark brown (10YR 3/3 to 4/3) light silty clay loam with few fine faint yellowish brown (10YR 5/4) mottles; strong medium to fine angular blocky structure; friable to firm when moist; dry colors are similar to horizon above except for considerable light brownish gray (10YR 6/2) silt coatings when dry; thick continuous black (10YR 2/1) clay films; many fine very dark grayish brown (10YR 3/2) iron concretions; many fine tubular pores; pH 6.0; clear smooth boundary.

14 to 18 inches. Brown to dark brown (10YR 4/3) silty clay loam with few fine distinct olive (5Y 5/3) and few medium faint dark yellowish brown (10YR 4/4) mottles; strong medium to fine angular blocky structure; firm when moist; black (10YR 2/1) to very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) thick continuous clay films coated with light brownish gray (10YR 6/2 moist) silt grains; many fine tubular pores and some root tracks on clay films; clay films are 10YR 4/2 to 5/2 in color when dry; many fine very dark grayish brown (10YR 3/2) iron concretions; pH 5.8 to 6.0; clear smooth boundary.

18 to 24 inches. Clive (5Y 5/4) to pale olive (5Y 6/4) heavy silty clay loam with common fine prominent dark yellowish brown (10YR 4/4) mottles; weak medium prismatic breaking to moderate fine to medium blocky structure; very firm when moist; thick black (10YR 2/1) and very dark gray (10YR 3/1) clay films which have 10YR 3/1 and 4/1 colors when dry with patches of grayish brown (10YR 4/2 to 6/2); numerous root tracks and some fine pores in clay films; many fine pores lined with very dark grayish brown (10YR 3/2 moist) clay films in ped interiors; many fine very dark grayish brown (10YR 3/2) and few medium very dark brown (10YR 2/2) iron concretions; pH 5.8; gradual smooth boundary.

24 to 33 inches. Olive (5Y 5/3) to pale olive (5Y 6/3) heavy silty clay loam with many coarse prominent yellowish brown (10YR 5/8) and dark yellowish brown (10YR 4/4) and a few medium prominent strong brown (7.5YR 5/8) mottles; moderate to strong medium prismatic structure which readily breaks to moderate medium blocks; very firm when moist; thick to very thick black (10YR 2/1 moist, 3/1 dry) clay films on vertical faces; moderately thick very dark grayish brown (10YR 3/2 moist, 4/1 dry) clay films on horizontal faces; some grayish brown (10YR 5/2) silty coatings when dry; numerous root tracks and some fine pores in clay films; many fine pores lined with very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) clay films inside peds; many fine very dark grayish brown (10YR 3/2) iron concretions; pH 6.2; gradual smooth boundary.

33 to 46 inches. Olive gray (5Y 5/2) to light olive gray (5Y 6/2) silty clay loam with many medium prominent yellowish brown (10YR 5/8) mottles; moderate medium prismatic structure which readily breaks into moderate medium blocks; firm when moist; very thick black (10YR 2/1 moist, 3/1 dry) clay films on vertical faces and medium thick very dark grayish brown (10YR 3/2 moist, 4/1 dry) on horizontal faces; many root tracks and few fine pores in clay films; many fine pores lined with very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) clay films inside peds; many very dark grayish brown (10YR 3/2) iron concretions; pH 8.0; gradual smooth boundary.

46 to 57 inches. Olive (5Y 5/3) to pale olive (5Y 6/3) silt loam with many medium prominent yellowish brown (10YR 5/8) mottles; massive to weak very coarse prismatic structure; friable when moist; black (10YR 2/1) and very dark grayish brown (10YR 3/2) clay films on vertical faces; many fine pores lined with very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) clay films; many very dark grayish brown (10YR 3/2) iron concretions; calcareous; gradual smooth boundary.

57 to 66 inches. Olive gray (5Y 5/2) to light olive gray (5Y 6/2) silt loam with many coarse prominent yellowish red (5YR 5/8) mottles and streaks; massive; friable when moist; some black (10YR 2/1) and very dark gray (10YR 3/1) clay films in root channels and cracks; few fine pores lined with very dark grayish brown (10YR 3/2) clay films; some very dark grayish brown (10YR 3/2) iron concretions; calcareous.

	SOIL	SURVE	/ LABORA	TORY_Linco	ln, Nebr.		February	1964
	SOIL	TYPE Cl	arksdale 1t loam	LOCAT	ION Mad	oupin Cou	nty, Illinois	***************************************
		SOIL NOS.	860111-59-2		LAB. N	IOS. <u>14</u>	332 <b>-</b> 14 <b>340</b>	***************************************
1	DEPTH INCHES	1181	A PART Y SE COARSE MEDIUM D SAND SAND 1-0.5 0,5-0.2	FINE SAND SAND 5.0.25-0.10 0.10-0.05	SILT	CLAY < 0,002 0.2-0.0 14.2 38.	3A1 2A2 > 2	TEXTURAL CLASS
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garanda <u>ra</u>	-						-	
	<u> </u>	11						
- 4———								
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Soil type: Clarksdale silt loam

Soil Was: : \$60III-59-2
Location: Macoupin County, Illinois; TION, Now, Section 21, SEL60, SW40, SEL0, 565 feet north from center of road and 42 feet west of southeast corner of SELO.

Parent material: Loess. Erosion: None.

Classification: Planosol.

Physiography: Loess covered Illinoian till plain.

Described by: F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, D. B. Phillips, and J. F. Steinkamp,

October 10, 1960.

Horizon and Lincoln Lab. No.

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יי מעריייין די ולבוני אורטערייינדים

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O to 8 Inches. Very dark mans (10VR 3/1) to many dark amudek brown (10VR 3/2) estat loom with some metabon

SOIL Clarksdale silt loam SOIL Nos S55111-75-8 LOCATION Pike County, Illinois
SOIL SHEVEY LABORATORY Beltsville, Maryland LAB. Nos. 551839 - 551847

	ł	181b							s and parti		r (mm) 3A:	<u>.</u>						
			Total		<b></b>		1	Sand		Sil	t				382	Coa 2A2	rse fragme	nts 3
Depth	Herizon	Sand	Silt	Clay	Very coarse	Coarse	Medium	Fine	Very fine	0.05.0.02	Int, [1]	int. II	(2.0.1)	Ì	Cm	>- 2	2 - 19	19-
(ln,)	}	(2-0.05)	0.002)	( < 0.002)	(2-1)			(0.25–0.1)	(0.1-0.05)	0.05-0.02	0.002)	(0.2-0.02)	(2-U.1)		Cm	Pct.	P	ct. of _ 76mm
0-8	Ap	-	79.4	17.6	0.2	0.9	0.6	0.5	0.8		40.9	39.5				-	†	1
8-11	A1		75.9	19.8	0.1	1.4	0.7	0.6	1.5		40.2	37.5				-		
1 <u>1-15</u> 15-19	A12 A2	· <del>-</del>	76.5 75.6	17.6 17.2	0.2	2.5 2.1	1.8	0.7	1.7		43.1 43.0	35.2 34.9				-	<del> </del>	┢
19-24	B21	ļ	59.6	38,2			0.6	0.6	0.8		36.0	24.7				-	1	
2h-31	B22	<del> </del>	57.6	40.0	<u> </u>	0.1	0.6	0.7	1.0		35.2	23.8 26.4		-			1	┢╌
31-41 41-52	B23 B3		62.1 68.2	35.6 30.1		0.1	0.6	0.8	0.8		36.9 39.6					-		
52-75	ci_	-	72.2	26.0		0.3		0.4	0.7		41.5						-	-
			1															
	l	<del></del>			<u> </u>			Bulk densit	<u>.                                    </u>		y	ater conte	nt .	<u> </u>	401		J pH	
Depth	6A1a Organic	Nitrogen	C/N		Carbonete	Ext. iron		4Ale	4A1h	4D1		4B1c	482		4C1		8Clc	8C
(ln.)	carbon				as CaCO <sub>3</sub>	as Fe		⅓ ber	Oven dry	COLE		≯≨ bar	15 bar		WRD		(1:1)	(1:
														}	in/in		KCI	H <sub>2</sub>
	Pet,	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		,		<u> </u>	7.
0-8 8-11	1.58													ŀ				6.
<u> 11-15</u>	0.78		<u> </u>					ļ						ļ				5. 5.
15-19 19-24	0.46				,							1 ,,						5.
24-31	0.50							ļ		ļ					Ļ			5.
31-41	0.34																	5.
41-52 52 <b>-</b> 75	0.07	Ļ			<u> </u>		ļ	<u> </u>	ļ					<b>.</b>	ļ <u>-</u>		↓	6.
		Extractel	ole bases 5	Bla		6HLa	C	EC	6Q1d				atios to cla	ly	803		Base sa	tyratio
Depth	6N2d	602b	6P2a	6Q2a		Ext.											5C3	5C
(in.)	Ca	Mg	Na	к	Sum	acidity	5A3a Sum		Ext.			CEC Sum	Ext. iron	15-bar water	Ça/Mg		Sum	NH <sub>4</sub>
	_	<u> </u>	1		   meq/100 g	l	cations	<u> </u>	<u> </u>							1	cations Pct.	Pc
0-8	13.4	2.3	0,1	0.4		3.5	19.7	T									82	Τ
8-11	10.0	2.0	0.1	0.3		5.9	18.3								ŀ		68 54	
11-15 15-19	6.7 5.3	2.2	0.1	0.2		7.6	16.4 15.2		1			<b></b>					51	十
19-24	10.8	7.8	0.3	0,6		10.7	30.2										64	
<u>24-31</u> 31-41	12.0	9.2	0.4	0.6	ļ	7.4	32.6 29.1	<del> </del>	<del> </del>			<del>                                     </del>					74	$\vdash$
41-52	10.8	8.8	0.7	0.4	,	4.9	25.6										81	
52-75	10.0	7.9	0.7	0.4		3.5	22.5		├		<u> </u>	-					84	+
				L	<u> </u>	<u>.</u>		<u> </u>						<u>L</u> .			<u> </u>	L
				Clay Fract	ion Analysi	s 7Alb-d												
Depth (In.)	Mt.	Chi.	Vm.	Mi.	int,	Qtz.	KI.	Gibbsite										
(,			7A;	ļ ?														
	4	<del>-</del>	X-ra			_	<del>  - 7</del>	/A3 <del></del>	<del> </del>	-					: chlarite, V z. = quertz,			= mid
			1	1								Rolative	amounts:	blank - ng	t determine	d, dash -	not detect	ted,
-	<b>-</b>	<del> </del>	<u> </u>		├─		<u> </u>	1-	$\vdash$	1		tr. 🗕 tr	108, X = SM	nali, xx = m	oderate, xx	x = abund	ent, xxxx =	= domí
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	<u> </u>					]												

Soil Type: Clarksdale silt loam

Soil No.: S55Ill-75-8

Location: Pike County, Illinois. T4S - R4W - Sec. 7 - NW160 - NE40 - NE10 - 21 rds. south, 106 feet

west of road junction.

Vegetation and land use: Soybean field

Slope and land form: 2 percent

Erosion: None Drainage: Imperfect Permeability: Slow

Parent Material: 75 inches of Peorian losss - 75 to 110 inches Farmdale losss over buried soil developed

in Loveland losss possibly.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 21, 1955.

Horizon and Beltsville Lab. No.

Ap 0 to 8 inches. Very dark gray (10YR 3/1), silt loam, weak, fine, crumb structure. Friable. 551839

Al 8 to 11 inches. Very dark gray (10YR 3/1), silt loam specked with dark gray (10YR 4/1), weak, 551840 fine, crumb structure. Friable.

A12 11 to 15 inches. Dark gray (10YR 4/1), silt loam specked with gray and very dark gray (10YR 551841 5/1 and 3/1), weak, fine, platy structure. Friable.

A2 15 to 19 inches. Gray (10YR 6/1), silt loam specked with very dark gray, dark yellowish brown, and yellowish brown (10YR 3/1, 3/4 and 5/6), very weak, medium subangular blocky structure. Friable.

B21 19 to 24 inches. Yellowish brown (10YR 5/6), silty clay loam, mottled with many fine, distinct grayish brown (10YR 5/2) and many very fine, distinct very dark gray (10YR 3/1) mottles, strong, medium, subangular blocky structure. Firm.

B22 24 to 31 inches. Yellowish brown (10YR 5/4), silty clay loam, mottled with many fine, pale brown (10YR 6/3) mottles. strong. medium to coarse, subspecial blocky to blocky structure

31 to 41 inches. Yellowish brown (10YR 5/6), silty clay loam mottled with many fine, distinct light gray (10YR 7/2) mottles, moderate, coarse, blocky structure with black (10YR 2/1) coatings on the peds. Firm.

41 to 52 inches. Brownish yellow (10YR 6/6), light silty clay loam mottled with many fine distinct light gray (10YR 7/2) mottles, very weak, very coarse, blocky to massive structure with black (10YR 2/1) fillings in worm and root channels.

C1 52 to 75 inches. Yellowish brown (10YR 5/8), silt loam mottled with many fine, distinct light 551847 brownish gray (10YR 6/2) mottles and some black (10YR 2/1) splotches.

C2 75 to 110 inches. Dark brown (7.5YR 4/4), silt loam mottled with brown (7.5YR 5/2) mottles. Not Sampled Farmdale losss.

Notes: Colors refer to moist soil.

SOIL \_\_\_\_Clary silt loam

SOIL Nos. 848I11-65-4 LOCATION Menard County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 481400 - 481407

	"	1B1b						Size cla	s and parti	cle diamete	er (mm) 3A	1						_
	1		Total					Sand		Si	it				382	Coa	rse fragme	ints 3
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II				2A2	l	Γ
(in.)		(2-0.05)	(0.05-	( = 0.002	coarse (2-1)				(0.1-0.05)	0.05-0.02	(0.02-		(2-0.1)		Cm	<b>&gt;-</b> 2	2 - 19	19-
	1	1_	0.002)	1	1 (2-1)		l t.of << 2		ľ		0.002)	Γ ]		ł		Pct.	P.	ct. of 76mm
0-6	Al	2.7	76.2	21,1	0.1	0.1	0.1	0.4	2,0	35.7	40.5	38.0	0.7	<del>                                     </del>		Tr.	<del>                                     </del>	1
6-10	Bl	1.4	65.5	33.1	"-	-	-	0.2	1.2	30.1	35.4	31.3	0.2			11.		
10-18	B21	1.4	59.6	39.0			-	0.1	1.3	29.2	30.4	30.5	0.1		L	_		<u> </u>
18-28	BS5	1.6	65.7	32.7	-	-	0.1	0.3	1,2	33.3	32.4	34.7	0.4			-		
28-40	B3	1.7	70.7	27.6	-	-	-	0.1	1.6	34.2	36.5	35.8	0.1			-		
<u>40-48</u> 48-61		2.7	73.3	24.0	<b>├</b> -	-	-	0.1	2.6	36.0	37-3	38.7	<u>.0.1</u>	1	L			₩-
61-68	C21.	2.3	84.7	17.6	-	-	-	0.1	2.2 1.6	44.8 44.1	35.3 40.6	47.0 45.8	0.1			-		l
	1			123.0			-		-	****		47.0					}	<u> </u>
		<u> </u>			<u> </u>						<u> </u>							<u>L</u>
	6Ala							Bulk densit	у.	4D1	<u> </u>	later conte	nt	4	4C1		pH	
Depth	Organic	Nitrogen	C/N		Carbonate	Ext. iron	1	4Ale	4Alh		l	4B1¢	4B2		! !		8Clc	8C1a
(ln.)	carbon		]	ļ	as CaCO <sub>3</sub>	es Fé	ļ.	a, ⊰sbar	Oven dry	COLE		≟s bar	15 bar	{	WRD		(1:1)	(1:1)
	8.	}	1				1	1					vai				'	1 :
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.	l	in/in		KCI	H <sub>2</sub> 0
0-6	1.3		1					1.46							$\vdash$			5.1
6-10	0.6						1	1.50						1				5.8
10-18	0.5	├	-	-	<b></b>			1.51			<b>.</b>							6.1
18-28 28-40	0.3	i						1.56				ļ						6.1
40-48	0.2							1.55										6.0
48-61	0.2							<u> </u>									<u>†                                      </u>	6.2
61-68	0,1						ĺ											7.9
		<u> </u>			-													
	<u>                                     </u>	Extractat	ole bases 5	Bla	L	6Hîla	C	EC	6G1d			Ŕ	atios to cla		8D3		Base sat	uration
	6N2d	1		1			ŀ							ĺ	1			$\overline{}$
Depth (in.)	1	602b	6P2a	6Q2a		Ext.	5A3a		Ext.			CEC	Ext.	15-bar	Ca/Mg		5C3	5C1
()	Ca	Mg	Na	K	Sum	acidity	Şum cations		Al			Sum	iron	water	<u>.</u>		Sum cations	NH404
					meq/100 g		1_,		-		_			ļ			Pet.	Pct.
0-6 6-10	6.0	2.2	0.1	0.7	1	5.9	14.9 21.8	}	1			\ \ \		1	2.7		60	1
10-18	12.4	4.7 5.9_	0.3	0.6	1	5.7 5.9	25.1	1			ì		•	l	2.2		74 76	1
18-28	10.2	5.6	0.2	0.5		5.3	21.8				<b></b>			<del>                                     </del>	1.8		76	<b></b>
28-40	9.3	5.2	0.4	0.5		5.1	20.5								1.8		75	
40-48	8.3	5.1 3.8	-0.3 0.2	0.5		4.7	18.9	<b></b>	<b> </b>					ļ	1.6		75	Ь.
48-61 61-68	6.5 9.3	3.8 4.3	0.2	0.3		3.7 0.6	14.7 14.6								1.7		75	
		-														<b>-</b>		
_		<u> </u>		Clay Fract	ion Analysi	8 7Alb-d	L	<u></u>	<u> </u>					<u> </u>				<u> </u>
Depth (In.)	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
	<b>_</b>	<u> </u>	7A2				7.	 				Mt. = M	ontmorillo	nite, Çhl. =	chlorite, Vn	n. = Verm	iculite, mi	= miça,
	<u> </u>											int. — Ir	nterstratifie	d layer, Qtz	quartz,	KI. = Kaoi	linite	
	<del> </del>	}			-										t determinec oderate, xxx			
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Illinois,

Soil Type: Clary silt loam

Soil No.: S48I11-65-4

Location: Menard County, Illinois. T. 18 N., R. 8 W., Sec. 14, NE 1/4, SE 40, 125 feet west and 100 feet N. of SE corner.

Vegetation and land use: Pasture

Slope and land form: 7 percent to NW.
Sampled by and date: J. B. Fehrenbacher and E. P. Whiteside. August 11, 1948.

Horizon and Beltsville Lab. No.

0 to 6 inches. LOYR 4/2. Silt loam. Mostly fine crumb, 1/4 inch. Thin platy in middle of

481400 this layer, 1/32 inch. Friable.

6 to 10 inches. 7.5YR 5/4. Light silty clay loam. Coarse granular to fine nuciform 1/8-3/8 inch. Faint gray silty coatings in upper part. Moderately sticky.

481401

10 to 18 inches. 7.5YR 5/4. Silty clay loam. Medium nuciform 1/4-3/4 inch. Sticky. B21 481402

B22 18 to 28 inches. 7.5YR 5/4. Silty clay loam. Nuciform, 3/8-7/8 inch. Sticky.

481403

28 to 40 inches. 7.5YR 4.5/4. 'Light' silty clay loam. Coarse to very coarse nuciform B3 481404

1/2-1 1/2 inch. Slightly sticky.

40 to 48 inches. 10YR 4.5/4. 'Heavy' silt loam. Massive. Few coatings, 10YR 4/4. Friable.

481405

48 to 61 inches. 10YR 5/5 - 5/6. Silt loam. Massive. Friable. cei.

481406

C22 61 to 68 inches. 10YR 7/5. Silt. Massive. Very friable. Calcareous.

481407

Notes: Roots were abundant in the Al and Bl, few were present in the B3, and very few in the C. This profile was slightly moist in the Al, and moist in the other horizons when sampled. Munsell notations are of the moist colors of freshly broken fragments.

	10.07 (1120.34																	ALUEL CONTROL		-
	SOIL	nton sil	t loam				_ SOIL	L Nos.	<u>8551</u>	11-1-7		LOCATION	Adaz	es Cou	nty, I	llinoi	8			-
	SOIL SURVEY	/ LABORATO	RY Bel	tsville, N	Maryland							LAB. Nos.	5518	330 -	5518 <del>3</del> 8	1				
							-										•			_
			1B1b	Total					Size cl	ass and part	ticle dia:	meter (mm) (	BA1			200		Coarse frag	201	7
			<b>—</b>			v	1		Sand	1	1	Silt	-	.		382	2A	2	ments 301	1
<u> </u>	Depth	Herizon	Sand	Silt	Clay	Very C	oarse	Medium	Fine	Very fine	<u> </u>	Int. II	I int. I	'	1	_	<u> </u>	2 2 - 1	9   19m 7E	J
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Soil Type: Clinton silt loam

Soil No.: \$55111-1-7

Location: Adams County, Illinois. T3S - R6W - Sec. 25 - SW160 - SW40 - SW10 - 37 rds. N. and 106 feet

E. of the SW corner of Sec. 25.

Vegetation and land use: Lespedeza, bluegrass pasture.

Slope and land form: 3-1/2 percent

Erosion: Slight

Drainage: Moderately well

Permeability: Slow

Parent Material: 60 inches of Peorian loess on possibly Illinoian outwash.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 20, 1955.

Horizon and Beltsville Lab. No.

0 to 7 inches. Dark grayish brown (10YR 4/2), silt loam with some dark brown specks 551830

(10YR 4/3), moderate, coarse, platy structure. Friable.

7 to 13 inches. Yellowish brown (10YR 5/4), silt loam, weak, fine, plates which break to a

551831 weak, fine subangular blocky structure. Friable.

13 to 16 inches. Yellowish brown (10YR 5/4), light silty clay losm coated with pale brown 551832

(10YR 6/3), weak to moderate, fine, subangular blocky structure. Friable.

16 to 21 inches. Brown (10YR 5/3), silty clay losm, coated with light brownish gray and pale brown (10YR 6/2 and 6/3), strong, medium, subangular blocky structure. Firm. B21 551833

B22 21 to 24 inches. Yellowish brown (10YR 5/6), heavy silty clay loam mottled with a few, fine distinct dark brown (7.5YR 4/4) and grayish brown (10YR 5/2) mottles, and coated when dry with 551834

gray (10YR 6/1), strong coarse, subangular blocky to blocky structure. Firm.

**B23** 551835

24 to 27 inches. Dark brown (7.5YR 4/4), silty clay loam mottled with a few, fine distinct reddish brown (5YR 4/4) and grayish brown (10YR 5/2) mottles and coated with gray (10YR 6/1)

when dry; weak, coarse, blocky structure. Firm when moist, sticky when wet.

27 to 34 inches. Yellowish brown (10YR 5/8), silty clay loam mottled with a few, medium, prominent grayish brown (10YR 5/2), reddish brown (2.5YR 4/4) and white (10YR 8/1) mottles, B24

551836

weak, medium blocky structure.

В3

34 to 40 inches. Brown (10YR 5/3), light silty clay loss mottled with common, coarse, prominent yellowish red (5YR 5/8) and few, coarse, prominent white (10YR 8/1) mottles, weak, 551837

very coarse blocky structure.

40 to 60 inches. Light brownish gray (10YR 6/2) silt loam mottled with common, coarse,

551838 prominent dark brown (7.5YR 4/4) mottles. Friable.

60 inches plus. Loam textured Illinoian outwash surface over possibly weathered Kansan till.

Not Sampled

Notes: Colors refer to moist soil unless indicated otherwise.

SOIL Clinton silt loam SOIL Nos. 21 LOCATION Macoupin County, Tilinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D3981 - D3999

I I		1B1b							s and parti		r (mm) 3A				6A3a			
			Total					Sand		Sil	t				Organic		rse fragme	nts 3B
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II			mitte:	2A2 >- 2	2 - 19	19-
(In.)			(0.05-	( < 0.002)	coarse (2-1)		(0.5-0.25)	(0.25-0.1)	(0.1-0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)		by	- '		١
			0.002)		(=1)	j Pot	! . of <= 2 :	 			0.002)	'			H2O2 Pct.	Pct.		t. of _ 6mm
0-3	A1	4.3	76.6	19.1	[ 0.1 ]	0.3	0.3	0.7	2.9	36.5	40.1	39.9	1.4	-	4.9		<del>                                     </del>	1
3 <del>} - 6}</del>	A21	4.0	77.5	18.5	0.1	0.2	0.ž	0.6	2.9	37.0	40.5	40.2	1.1		3.0	tr.		
31-61 62-11	A22	4.9	76.0	19.1	0.1	0.3	0.3	0.8	3.4	35.9	40.1	39.7	1.5		1.6	tr.		Ì
11-15	A3	3.7	74.0	22.3	-	0.2	0.2	0.5	2.8	34.7	39.3	37.7	0.9		0.8	tr.	1	1
15-19	B1	3.8	67.2	29.0	-	0.1	0.2	0.6	2.9	29.4	37.8	32.6	0.9		0.4	tr.		
19-23	B21	2.6	62.9	34.5	-	0.1	0.1	0.3	2.1	26.3	36.6	28.6	0.5		0.3	tr.		l
23-27	B22	2.3	61.6	36.1	-	0.1	0.1	0.3	1.8	25.2	36.4	27.2	0.5		0.2	tr.		1
27-31	B23	2.3	61.9	35.8	-	0.1	0.1	0.3	1.8	25.8	36.1	27.8	0.5		0.3	-	i	1
31-34.	B31	2.8	64.3	32.9	-	0.1	0.1	0.5	2.1	29.4	34.9	31.7	0.7		0,2	-		
34-36	<b>B</b> 32	3.6	63.8	32.6	0.1	0.2	0.2	0.6	2.5	29.2	34.6	32.1	1.1		0.2	-	İ	
6 <del>]</del> -39"	B33	3.1	65.8	31.1	-	0.1	0.1	0.5	2.4	31.2	34.6	33.9	0.7		0.2	-	ļ	
3 <u>9-43</u>	<u> 134</u>	<u> </u>	67.2	29.8	0.1	ا ۾ ءِ	10.3	القائق	2.1	31.4	35.8	34.6	8.3	<u> </u>	0.2	<del>!</del>	<del> </del>	<del> </del>
43-49	B35	2.4	70.6	28.3 27.1	-	0.1	0.1	0.3	1.9	32.6	36.7	33.3	0.4		0.1	-		
49-52	B36	2.6	73.2	24.2	-	0.1	0.2	0.4	1.9	31.6	41 <u>,6</u>	33.7	0.7		0.1	1 🗓		
52-56 56-60	C2	2.4	74.5	23.1	-	0.1	0.1	0.3	1.9	32.2	42.3	34.2	0.5	T	<del>-</del> -	<del>  -</del>	1	
60-66	C3	2.7	75.4	21.9	-	0.2	0.3	0.4	1.8	33.0	42.4	35.1	0.9		_	-	1	1
66-72	C4	8.5	72.1	19.4	0.1	1.1	1.8	2.2	3.3	35.3	36.8	39.6	5.2		0.1			
72-79	C5	15.2	66.1	18.7	0.3	2.6	3.6	4.3	4.4	34.4	31.7	40.8			0.2	tr.	1	
15-17	L	٠.٠٠	1		1 ~.3	[	""	<u> </u>	<u> </u>	<u> </u>		<u> </u>		i			<u> </u>	<u> </u>
		Extractal	nie bases	5Bla		6ELa	C	EC	6G1d	-			рH		8D3		Base sat	uratio
n	6N2d	602b	6P2a	5Q2a		Ext.							8C1c	8C1a			5Ç3	5C
Depth (In.)		1	i .	1		LALI	5A3a		Ext.	l			1	l	Ça/Mg		1	
<b>\</b> ,	Ca	Mg	Na	K	Sum	acidity	Sum		A)		l		(1:1)	(1:1)			Sum	NH <sub>4</sub>
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0-3 <del>1</del> 31-6 <del>2</del> 62-11	12.9 8.7	2.2 1.6				6.0								6.9			63	1
25-02		1.6			ļ	6.4	į		l			1	į	5.9	}		52	
11-15	5.5 6.3	2.7	<b>├</b>	<del> </del>	-	4.7	<u> </u>		1			<b>†</b>	1	5.3	+	1	66	1
15-19	0.5	2.1	1			**'	1		İ				1	5.2			"	
19-23	10.2	6.7	1			6.1				ł				5.3		İ	74_	1
23-27	10.9	7.7	1	1		6.8	1			İ		† <del></del>		5.3			73	1
27-31	10.2	7.7		1		8.5		1						5.1			68	1
31-34		1 '''	1	1				1		i				4.9	1		1	
34-36 <del>2</del>	8.7	7.1	i i			8.8		1			1,			4.8		1	64	
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6 <del>}</del> -39 39-43		<u> </u>	ļ			<u> </u>	<u>.                                    </u>	<u> </u>	<u> </u>	1	<u> </u>	1	<b>∤</b>	4.7	+	<b>-</b>	61	1
43-49	6.9	6.2				8.5							1	4.6			OT	
49-52		/ -				ء ا	1				1			4.6			70	ı
52-56	7.7	6.3	ļ	<b>↓</b> · —-	-	6.0	<b>├</b> ─	-	-	<del>-</del>	-	<b>├</b> -	+ -	5.0	<del> </del>	+	+ '	+-
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60-66 66-72	8,0	6.6		1		7.5		1	1	1		1	1	5.4 5.6	1	1	'	1
66-72 72 <b>-</b> 79	6.5	4.9	<del>                                     </del>	<del> </del>	1	2.8	1	<del> </del>	1	<del>                                     </del>	1	t —		5.8	1	<del>                                     </del>	80	1
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	<u> </u>	_		Clay Fract	tion Analys	is 7Alb-d				4			art of	Prote	ect Z-1	L-2-8		
Depth	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Glbbsite	1	1		- 1				0		
(ln.)	1	1	1	1	1				1	1								
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		1	Γ		Ι					l		Int. = (	Interstratifi	ed layer, Ç	itz. == quarti	ε, πι. = Ka	onnie	
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Soil Type: Clinton silt loam

Soil No.: 21a

Location: Macoupin County, Illinois. SW 1/4 of NW 1/4 of Sec. 30, T 8 N, R 9 W about one mile southwest of Piasa, Illinois.

Vegetation and land use: Hickory, white oak, post oak, bur oak, elm, with a ground cover of grape vines, elm and oak seedlings, gooseberry and various herbaceous plants.

Slope and land form: 6 percent

Sampled by and date: H. Wascher, E. P. Whiteside, G. Mickelson, L. T. Alexander, A. M. O'Neal and R. J. Muckenhirn.

October 11, 1944.

Horizon and Beltsville Lab. No.

<del>ÓTES OTE MES</del>

Not Sampled One-half inch of fresh and partially decomposed organic matter.

0 to 3 1/4 inches. Weak brown silt loam; fine to very fine granular structure; roots up to 3/4 inch D3981 in diameter.

 $3\ 1/4$  to  $6\ 1/2$  inches. Light brownish gray or brownish gray silt loam; fine granular structure; little evidence of platiness; roots abundant up to one inch in diameter; worm casts common. D3982

6 1/2 to 11 inches. Light yellowish brown silt loam; coarse granular structure; moderately to highly D3983 vesicular; lightly sprinkled with silica flour; friable; root channels and insect burrows filled with weak brown or brownish gray material from the layer above; worm casts very abundant; roots common.

11 to 15 inches. Moderate yellowish brown silt loam; medium blocky structure; moderately vesicular; D3984 very slight sprinkling of silica flour; friable; wormholes abundant; roots fairly common; tongue of brownish gray material extend into this layer.

15 to 19 inches. Moderate yellowish brown "light" silty clay loam; medium blocky structure; moderately D3985 vesicular; friable; roots fairly common; worm and insect burrows common.

19 to 23 inches. Moderate brown to moderate yellowish brown silty clay loam; medium angular blocky structure; slightly vesicular; friable; wormholes fairly common; roots few.

D3986

23 to 27 inches. Moderate brown silty clay loam; medium to coarse blocky structure; very slightly D3987 vesicular; very hard; wormholes and roots few.

D3988 27 to 31 inches. Moderate brown silty clay loam; medium blocky structure; similar to layer above.

31 to 34 inches. Moderate to dark yellowish brown silty clay loam; medium blocky structure; irregular-D3989 ly sprinkled with silica flour; very slightly vesicular; firm; roots few.

34 to 36 1/2 inches. Moderate yellowish brown "light" silty clay loam; medium blocky structure; very slightly vesicular; well coated with silica flour; friable; specked with dark brown; roots fairly D3990

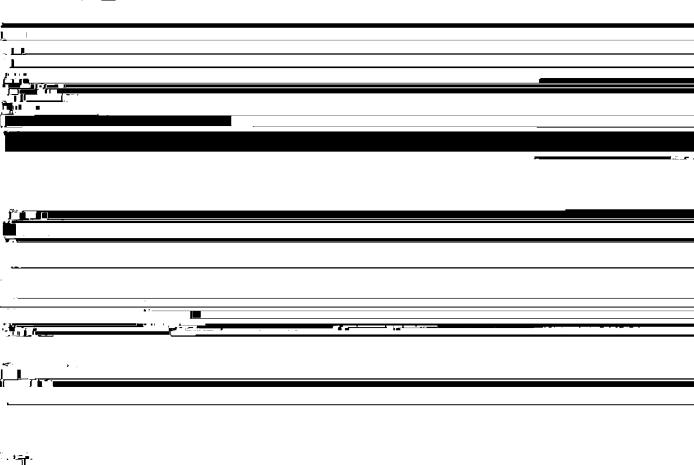
36 1/2 to 39 inches. Moderate yellowish brown "light" silty clay loam; medium blocky structure; D3991 heavily costed with silica flour; slightly vesicular; firm; roots fairly common.

39 to 43 inches. Moderate vellowish brown silty clay loam; medium to coarse blocky structure; beardur

U. S. DÉPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

SOIL Clinton silt loss SOIL Nos. 158 LOCATION Warren County, Illinois
SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. D3914 - D3937

		181b						Size cla	ss and parti	cle diamete	er (mm) 3A	1			6A3a			
1			Total					Sand		Şil	t				Organic	Coar	se fragment	ts 3BI
Depth (in.)	Horizon	Sand (2-0.05)	Şilt (0.05– 0.002)	Clay (< 0.002)	Very coarse (2-1)	1	Medium (0.5–0.25	1	Very fine (0.1–0.05)	0.05-0.02	int. III (0.02– 0.002)	Int, II (0.2–0.02)	(2-0.1)		metter by H <sub>2</sub> O <sub>2</sub> Pct.	2A2 >= 2 Pct.	"	19-76 of
0-5		6.4	81.4	12.2	0.1	0.4	0.3	1.1	4.5	42.9	38.5	48.1	1.9		2.7	-		
23-6		5.3	82.4	12.3	-	0.3	0.3	0.6	4.1	43.2	39.2	47.7	1.2	i	0.9	tr.		
6-9		5.2	79.1	15.7	. <del>-</del>	0,2	0.2	0.6	4.2	40.7	38.4	45.2	1.0		0.5	tr.		
9-12		3.7	74.6	21.7	-	0.1	0.1	0.3	3.2	38.2	36.4	41.6	0.5	- 1	· -	-		
12-15		4.2	68.3	27.5	-	0.2	0.2	0.5	3.3	32.8	35.5	36.4	0.9	.	0.5	tr.		
15-17 <del>}</del>		2.9	66.9	30.2	•		0.1	0.2	2,6	31,2	35.7	33.9	0.3		0.6	-		
17 <del>2</del> -20		2.7	63.9	33.4	-	-	0.1	0.2	2.4	29.1	34.8	31.6	0.3	l	0.6	-		
20-23		3.4	61.9	34.7	0.1	0.2	0.1	0.4	2.6	26.0	35.9	28.9	0.8		0.5	-	i 1	
23-26		2.0	60.3	37.7	-	0.1	0.1	0,3	1.5	22.9	37.4	24.6	0.5		0.6			
26-29		2.9	62.5	34.6	-	0.1	0.1	0.3	2.4	27.7	34.8	30.3	0.5		0.5	-		
雞骐		2.8	63.5	33.7	-	0.1	0.1	0.3	2.4	29.1	34.4 37.1	31.7	0.4		0.5	-		
332-352		1.8	64.2 64.9	34.0	0.1		0.1	0.2	1.5	25.5	38.7	27.1	0.3		0.3	-		



Soil Type: Clinton silt loam

Soil No.: 15ª
Location: Warren County, Illinois. NW 1/4 of NM 1/4 of Sec. 21, T 11 N.

Vegetation and land use: Woods had thin stand of white caks with understory of elm and hickory saplings, some

underbrush, and a thin bluegrass stand over most of the area.

not evident.

Slope and land form: 5 percent to southwest.

Sampled by and date: H. Wascher, E. P. Whiteside and R. J. Muckenhirn. September 30, 1944.

Horizon and Beltsville Lab. No.

O to 2 1/2 inches. Weak brown silt loam of fine gramular structure; friable; numerous roots; tendency toward platiness in the lower part of this layer; worm casts relatively few. D3914

2 1/2 to 6 inches. Light yellowish brown silt loam of fine platy structure; breaking to flattened medium granules; friable; thinly sprinkled with silica flour; roots abundant; worm casts few. D3915

6 to 9 inches. Moderate yellowish brown silt loam of medium platy structure in place; moderately vesicular; lightly coated with silica flour; breaks to a coarse gramular to medium blocky structure; roots fairly abundant, generally of 1/8 inch in diameter; Wormholes and casts not evident. D3916

9 to 12 inches. Moderate yellowish brown silt losm of medium blocky structure; lightly coated with silica flour; slightly vesicular; roots common and generally 1/8 to 1/4 inch in diameter; worm activity D3917

12 to 15 inches. Moderate yellowish brown silty clay loam of medium blocky structure; thinly coated with silica flour; slightly vesicular; friable; roots fairly common. D3918

15 to 17 1/2 inches. Moderate brown to dark yellowish brown silty clay loam; fine blocky structure; D3919 friable; well coated with silica flour; very slightly vesicular; roots common.

17 1/2 to 20 inches. Moderate brown "heavy" silty clay losm to silty clay; medium blocky structure; slightly vesicular; angular; firm; sprinkled with silica flour; roots common. 13920

20 to 23 inches. Dark yellowish brown "light" silty clay; medium blocky structure; slightly coated D3921 with silica flour; vesicular; firm; fibrous roots present in crevices

23 to 26 inches. Dark yellowish brown silty clay; coarse blocky structure; slightly vesicular; occasinal sprinklings of silica flour; firm; roots common; and follow crevices. D3922

26 to 29 1/2 inches. Dark yellowish brown silty clay; coarse blocky structure; slightly vesicular; D3923 thinly coated with silica flour, occasional dark orange mottling; firm.

29 1/2 to 31 1/2 inches. Moderate brown to dark yellowish brown silty clay; medium blocky structure; D3924 specked with dark brown; sprinkled with silica flour; roots common.

31 1/2 to 33 1/2 inches. Dark yellowish brown silty clay loam; medium blocky structure; slightly D3925 vesicular; thinly sprinkled with silica flour; specked with dark brown; fibrous roots fairly common.

33 1/2 to 35 1/2 inches. Dark yellowish brown silty clay loam; coarse blocky structure; similar to D3926 layer above.

35 1/2 to 39 inches. Dark yellowish brown silty clay loss; coarse blocky structure; slightly vesicular, D3927 specked with dark brown and faintly mottled on the interior; irregular coatings of silica flour; roots few and generally in crevices.

39 to 42 inches. Dark yellowish brown silty clay loam; medium to coarse blocky structure; similar to D3928 above layer.

42 to 46 inches. Moderate to dark yellowish brown "light" silty clay loam; coarse blocky structure; D3929 moderately vesicular; coated with silica flour; roots fairly common.

46 to 49 inches. Moderate wellowish brown "heavy" silt loss; coarse to very coarse blocky structure.

D3930	moderately vesicular; faint mottlings; friable; roots few.
D3931	49 to 52 inches. Light yellowish brown "heavy" silt loam; similar to above.
D3932	52 to 58 inches. Light yellowish brown "heavy" silt loam; coarse, weak blocky structure; orange and light gray mottlings; moderately vesicular; roots few.
D3933	58 to 64 inches. Moderate yellowish brown "light" silty clay loam; coarse blocky structure; moderately vesicular; mottled with light yellowish brown and light gray.
D3934	64 to 70 inches. Moderate yellowish brown "heavy" silt lown; similar to above layer.
D3935	70 to 77 inches. Light yellowish brown "heavy" silt loam; weak coarse blocky structure; slightly vesicular; specked with brown and light gray.
	77 to 84 inches. Light yellowish brown silt loam; weakly developed course blocky structure; slightly

SCS-421 10.54 U. S. DEPARTMENT OF AGRICULTURE SOIL SURVEY LABORATORY <u>Lincoln</u>, Nebraska General Methods: lA, 1Blb, 2Al, 2B LAB. Nos. 19340-19347 May 16, 1966 Size class and particle diameter (mm) a. Sand Silt Total Coarse fragments 2A2 Int TIT Verv 

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Soil type: Colo Silty Clay Loam
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Soil Nos.: S63 Ill-8-1

Location: Carroll County, Illinois, 340 feet west from center of private road at the SE corner of the NE4 of the NW4 of Section 31, T23N, R4E and 100 feet north of north side of drainage ditch on quarter-line.

Vegetation and use: Cropland (fall plowed soybean stubble).

Slope and land form: Nearly level Mississippi River valley floor.

Drainage and permeability: Poorly drained with slow surface run-off; moderately permeable.

Parent material: Alluvium

Described and sampled by: L. E. Tyler, R. L. Newbury, R. Rehner, October 15, 1963.

Horizon and Lab. Nos.

Ap 0-9 inches, black (10YR 2/1) to very dark gray (10YR 3/1) light silty clay loam; weak, medium granular LSL 19340 structure; friable; neutral to mildly alkaline; abrupt, smooth boundary. (Clay estimate: 27 to 28

UIL 19446 percent.)

A12 9-14 inches, black (N 2/ to 10YR 2/1) medium to heavy silty clay loam; weak, fine angular blocky LSL 19341 structure; firm; neutral to mildly alkaline; gradual smooth boundary. (Clay estimate: 35 to 38 percent.)

UIL 19447

Al3 14-23 inches, black (10YR 2/1) medium silty clay loam with common, fine, distinct reddish brown (5YR 4/4)
LSL 19342 to dark reddish brown (5YR 3/4) mottles forming a network in root channels and along roots; moderate, fine
UIL 19448 and very fine angular blocky structure (some tendency toward prismatic); firm; few clean sand grains on
ped surfaces; neutral to mildly alkaline; gradual smooth boundary. (Clay estimate: 33 to 35 percent.)

Al4 23-33 inches, very dark gray (10YR 3/1) medium silty clay loam with mottling network as above; medium to LSL 19343 strong, fine prismatic structure; firm; few clean sand grains on ped surfaces; neutral to mildly alkaline; UIL 19449 gradual smooth boundary. (Clay estimate: 33 to 35 percent.)

AC 33-44 inches, very dark gray (10YR 3/1) medium silty clay loam with mottling network as above but LSL 19344 becoming more plentiful and distinct in lower part; weak medium prismatic structure; firm; crayfish UIL 19450 tunnels common; mildly alkaline; gradual, smooth boundary. (Clay estimate: 32 to 34 percent.)

Cig 44-53 inches, dark gray (2.5% 4/1) heavy silt loam with common, medium, prominent yellowish brown LSL 19345 (10% 5/6) and dark red (2.5% 3/6) mottles; massive with some vertical cleavage; friable; some soft UIL 19451 Fe-Mn concretions; crayfish tunnels common; mildly alkaline; gradual smooth boundary. (Clay estimate: 25 to 27 percent,)

C2g 53-61 inches, as above horizon except slightly lighter texture. LSL 19346 UIL 19452

C3g 61-70 inches, grayish brown (2.5Y 5/2) silt loam with common, medium, prominent strong brown (7.5YR 5/6)
LSL 19347
UIL 19453

Remarks: Colors described for moist soil. May be some recent overwash incorporated in Ap. Crayfish tunnels were 2 to 3 inches in diameter, more or less vertically aligned and filled with material usually black (10YR 2/1), silty clay loam with common, fine, faint very dark grayish brown (10YR 3/2) mottles. These fillings made up nearly 50 percent of the matrix in the lower horizons but were avoided in sampling.

Lack of visible color differences between ped interiors and exteriors, including mottles, and inability to identify ped coatings was the basis for omitting a B horizon.

SOIL SURVEY LABORATORY Lincoln, Nebr. February 1964

SOIL TYPE Cowden LOCATION Montgomery County, Illinois
silt loam

SOIL NOS. \$60111-68-1 LAB. NOS. 14302-14311

}	***************	IBla		PARTI	CLE SIZ	E DISTRIB	UTION (in	miw") (be	r cent)34	AL.		
DEPTH		VERY				VERY					2A2	TEXTURAL
INCHES	HORIZON	COARSE	COARSE SAND	MEDIUM SAND	FINE	FINE	SILT	CLAY			> 2	TEXTURAL CLASS
		2-1	1-0.5	0.5-0.25	Q. 25-0. 10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	<b>Q02-Q002</b>		
0-7	Aр	0.2a	1.la	1.1b	2.00	1.60	81.0	13.0	47.1	36.4	-	
7-12	A21	1.2a	1.6a	1.0b	1.60	1.00	75.7	17.9	33.0	44.4	-	
12-14	A22	0.8e	1.4a	0.96	1.4b	1.3c	74.4	19.8	31.7	44.6	•	
14-16	A2& B	0.5a	0.9a	0.7ь	1.2b	0.96	65.8	30.0	27.0	40.3	-	
16-21	B21	O.la	0.7a	0.6ъ	0.9a	0.9ъ	53.9	42.9	21.0	34.2	-	1 1
21-27	B22	0.3a	0.8a	0.7a	1.3a	0.8a	55.8	40.3	22.7	34.5	-	1 1
27-36	B23	0.4a	0.9a	0.8a	1.5a	1.0a	60.8	34.6	27.1	35.4	-	
36-44	B31	0.4a	1.5a	1.5e	3•3e	1.50	64.0	27.8	30.4	36.6	-	
1 7	T&I IHE	0.7c	3.0	4.5	10.9	3.8	54.3	22.8	35.2	27.9	_=	
55-65	IIC	1.20	3.8	5.5	13.6	4.6	50.6	20.7	35.7	25.8	Tr.	<u> </u>

Soil type: Cowden silt loam : \$60111-68-1

Soil Nos. : S60111-68-1 Location: Montgomery County, Illinois; TlON, R5W, Section 25, SW160, SW40, NW10, 618 feet south and 255 feet east of

center of "T" road junction at the northwest corner of NW10.

Drainage: Somewhat poorly grading towards poor. Parent material: Loess. Slope: 0 to 1/2 percent. Classification: Planosol.

Physiography: Loess covered Illinoian till plain. Vegetative cover: Corn.

Described by: F. J. Carlisle, C. E. Downey, J. B. Fehrenbacher, L. J. Bartelli, J. F. Steinkamp, and D. B. Phillips, October 20, 1960.

Horizon and Lincoln Lab. No.

0 to 7 inches. Very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) silt loam; dry colors are Ap 14302 grayish brown (10YR 5/2) with some 10YR 7/2 grain silt patches; weak medium granular structure; friable when moist; common 10YR 3/2 moist iron concretions; few fine pores; pH 7.0; abrupt smooth boundary.

7 to 12 inches. Very dark gray (10YR 3/1) to dark gray (10YR 4/1) silt loam with some specks of 10YR 5/2; A21 dry color gray (10YR 5/1), which is much affected by thin coating of blanched silt grains that is discon-14303 tinuous at a scale of 1 to 2 mm.; the 5/1 color is summation of effect of light gray to white blanched silt and darker (estimate 4/1) material; weak fine subangular blocky structure; friable when moist; possibly a few 10YR 3/1 clay films; common fine pores and few medium pores throughout peds; numerous 10YR 3/2 iron concretions; pH 5.5; clear smooth boundary.

12 to  $14\frac{1}{2}$  inches. Dark gray (10YR 4/1) to dark grayish brown (10YR 4/2) silt loam with few fine faint 10YR 4/4 mottles and some flecks of 10YR 5/2; flecks when dry are 10YR 7/1 and 10YR 6/1; dry colors are 422 14304 mottled 10YR 6/2 and 10YR 7/1 in fine faint pattern with few fine yellowish brown mottles; the 10YR 7/1 colors are patches of blanched silt; weak coarse platy and weak very fine subangular blocky structure; friable when moist; clay films not identifiable with any certainty; common fine to medium pores through peds; numerous 10YR 3/2 iron concretions; pH 5.3; abrupt smooth boundary.

14 to 16 inches. Brown (10YR 5/3) silty clay loam for B; gray (10YR 5/1) silty clay loam for A2; few fine A2 and B 14305 faint 10YR 5/8 mottles; strong medium and fine subangular blocky structure; firm when moist; moderate 10YR 4/2, moist, clay films but predominant dry surface colors are in range of 10YR 7/1 to 10YR 6/2 as a result of varying thicknesses of blanched silt on ped surfaces; few fine pores throughout peds; many 10 YR 4/4 and 10 YR 3/2 iron concretions; pH 5.5; abrupt smooth boundary.

16 to 21 inches. Brown (10YR 5/3) heavy silty clay loam with common fine faint to distinct 10YR 5/8 RO1 mottles; moderate fine and medium prismatic breaking to moderate to strong medium to fine blocky structure; firm when moist; moderately thick lOYR 4/1 to lOYR 4/2 clay films (moist and dry); some patches of lOYR 14306 5/2, moist, and 10YR 6/1 blanched silt grains on prism faces; many fine pores and root tracks in clay films; many fine pores in peds lined with 10YR 3/1 clay films; some 10YR 4/4 iron concretions; pH 5.3; clear smooth boundary.

B22 21 to 27 inches. Olive gray (5Y 5/2) heavy silty clay loam with many medium prominent loyR 5/6 mottles; strong fine and medium prismatic breaking to moderate medium blocky structure; very firm when moist; clay 14307 films are moderately thick continuous 10YR 4/1 to 10YR 4/2, moist; blanched silt grains of 10YR 5/2, moist, and 10YR 6/1, dry, on main prism faces; common fine pores and many root tracks in clay films; common to many fine pores inside peds lined with 10YR 3/1, moist; many fine 10YR 4/4 iron concretions; pH 5.2; gradual smooth boundary.

B23 14308 27 to 36 inches. Olive gray (5Y 5/2) heavy silty clay loam with many medium prominent lOYR 5/4 and 5/8 moist, mottles; strong medium prismatic breaking to moderate medium and coarse blocky structure; very

	SOIL	SURVEY	LABORAT	ORY.	Idneoln, N	lebr.		February	1964
	SOIL	TYPE Cow	đen t loam	LC	CATION	Montgon	ery Count	y, Illino	ois
		SOIL NOS.	s60111-68-3		LAB	. NOS	14341	-14349	
· V-	DEPTH	JBla.	PARTIC	LE SIZE	DISTRIBUTION VERY FINE	(in mm.) (	por cest) 3A1	2 <b>A</b> 2	TEXTURAL
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<u> </u>	Liting and the second	ILIS FRANCESCO			<b>■</b> (6* <b>=</b> 5)	4:			

Soil type: Cowden silt loam Soil Nos. : 860111-68-3

Iocation: Montgomery County, Illinois; T8N, R3W, Section 28, NW160, SE40, NW100, 438 feet south and 260 feet east of point which is in center of State Highway 185 and directly in front (south) of the center of farm house

located on north side of Highway 185. Parent material: Loess.

Drainage: Poor, grading toward somewhat poorly. Slope: 1/2 to 1 percent. Erosion: None.

Classification: Planosol. Physiography: Loess covered Illinoian till plain.

Vegetative cover: Soybean stubble.

Described by: F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, D. B. Fhillips, and J. F. Steinkamp.

October 19, 1960.

Horizon and Lincoln Lab. No.

0 to 8 inches. Very dark gray (10YR 3/1) silt loam; grayish brown (10YR 5/2) dry; massive (cloddy) to very weak coarse granular structure; friable when moist; very few tubular pores; many fine very dark grayish brown (10YR 3/2) and common medium very dark brown (10YR 2/2) iron concretions; pH 6.0; abrupt Ap 14341

smooth boundary.

A21 8 to 14 inches. Very dark gray(10YR 3/1)60 percent and grayish brown(10YR 5/2)40 percent silt loam; dry 14342 colors are gray (10YR 6/1 and 5/1); moderate to strong medium platy structure; friable when moist; discontinuous patches of light gray blanched silt on plate surfaces; common fine pores with possibly a few very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) iron concretions; pH 5.7; clear smooth

A22 14343 14 to 17 inches. A silt loam with mixed moist colors of grayish brown (10YR 5/2) 60 percent, gray (10YR 6/1) 20 percent, and dark gray (10YR 4/1) 20 percent; dry colors are light gray (10YR 7/1) and light brownish gray (10YR 6/2); moderate medium subangular blocky structure with weak medium plates; friable when moist; very porous with fine tubular pores; peds have a puffy appearance; possibly a few very dark gray (10YR 3/1) clay films in worm channels or may be material from upper horizons; pH 4.5; clear smooth

boundary.

A2 and B 17 to 19 inches. The component is grayish brown (10YR 5/2 moist) heavy silt loam and the B has the same texture but is brown (10YR 5/3 moist); dry colors of ped surfaces are light gray (10YR 7/1) white (10YR 8/2) and light brownish gray (10YR 6/2); weak fine subangular blocky structure; friable when moist; many 14344 fine tubular pores throughout peds; possibly a very occasional 10YR 4/1 clay film in worm channel; many fine very dark grayish brown (10YR 3/2) and very dark brown (10YR 2/2) iron concretions; pH 5.5; very abrupt smooth boundary.

B2 and A2 14345

19 to 21 inches. The B2 is brown (10YR 5/3) heavy silty clay loam whereas the A2 consists of 10YR 6/1 and some 10YR 5/1 moist; common fine faint dark yellowish brown (10YR 4/4) mottles; dry ped colors are light gray (10YR 7/1) and light brownish gray (10YR 6/2) with some white (10YR 8/2); strong medium to fine subangular blocky and blocky structure; firm when moist; very many fine tubular pores; many very dark grayish brown (10YR 3/2) and very dark brown (10YR 2/2) iron concretions; pH 5.5; abrupt smooth boundary.

B21 14346

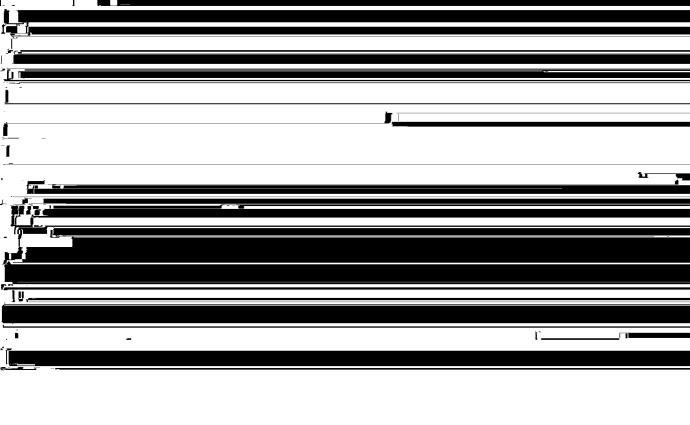
21 to 28 inches. Brown (10YR 5/3) silty clay loam to silty clay with many fine prominent olive gray (5Y 5/2) and common fine distinct yellowish brown (10YR 5/6) mottles; strong medium prismatic breaking to strong medium to coarse blocky structure; very firm to firm when moist; moderately thick very dark gray (10YR 3/1 moist) clay films; when dry the prism surfaces are predominately grayish brown (10YR 5/2) and pale brown (10YR 6/3) with about 1/3 of surface covered by discontinuous dark gray (10YR 4/1) to dark grayish brown (10YR 4/2) clay films; occasional patch of light gray blanched silt; some black (10YR 2/1) clay films in few worm channels; common fine pores and many root tracks in clay films; very many fine very dark grayish brown (10YR 3/2) to very dark brown (10YR 2/2) iron concretions; few worm channels; pH 5.5; gradual smooth boundary.

14347

28 to 36 inches. Olive gray (5Y 5/2 moist) heavy silty clay loam with many fine prominent yellowish brown (10YR 5/4) and brownish yellow (10YR 6/8) mottles; moderate medium prismatic structure which breaks to moderate coarse blocky structure; firm to very firm when moist; moderately thick dar

SOIL		Cos		~·····	_			fontgome	ery Cou	February, I		1964 s
	SOIL N	08	<b>8</b> 60 <b>I</b> 11	68-4	<u></u>		LAB.	NOS.	<u>143</u>	50-1430	50	
DEPTH		1Bla	COAPSE			E DISTRI	NOITUS	n mm.) (p	e cent) 3	Al	2A2	TEXTURAL

1			lBla		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	n cent) 3	Al			ı
	DEPTH INCHES		VERY				VERY					2A2	TEXTURAL	
	INCHES	HORIZON	COARSE	COARSE SAND	MEDIUM SAND	FINE SAND	FINE SAND	SILT	CLAY	<u> </u>		> 2	CLASS	
			2-1	1-0.5	0.5-0.25	0.25-0.10	0, 10-0,05	0.05-0.002	< 0.002	0, 2-0.02	0.02-0.002			į
ı	0-8	Αp	0.1	0.9	1.6	2.5	1.4	80.3	13.2	32.1	50.7	Tr.		ĺ
	8-11	A21	0.3a	1.2	1.6	2.7	1.5	79.5	13.2	32.9	49.3	Tr.		1
	11-14	A22	0.la	1.2	1.7	2.8	1.6		10.6	34.2	50.7	Tr.		ı
	14-17	A23	0.6a	1.3	1.8	2.7	1.5	76.3	15.8		46.0	Tr.		
		B2&A2	0.7a	1.2	1.6	2.3	1.3			27.3	39.3	Tr.		ı
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Soil type: Cowden silt loam

Soil Nos. : 360111-68-4

Location: Montgomery County, Illinois; T7N, R4W, Section 1, NW160, NW40, NEIO, 400 feet south and 180 feet west of center of crossroad junction at northeast corner of NEIO.

Parent material: Loess. Classification: Planosol. Drainage: Poor.

Slope: 0 to 1 percent. Erosion: None.

Physiography: Loss covered Illinoian till plain. Vegetative cover: Soybean stubble.

Described by: F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, J. F. Steinkamp, and D. B. Fhillips, October 20, 1960.

Horizon and

Lincoln Lab. No.

O to 8 inches. Very dark gray (10YR 3/1 moist) silt loam which is gray (10YR 5/1) when dry; massive Ap 14350

(cloddy) to weak moderate granular structure; friable when moist; few medium pores; common fine very dark grayish brown (10YR 3/2) iron concretions; few patchy grayish brown (10YR 5/2 moist) silt concentrations;

pH 6.5; abrupt smooth boundary.

8 to 11 inches. A silt loam with mixed very dark gray (10YR 3/1) 75 percent and grayish brown (10YR 5/2) 25 percent colors; dry color gray (10YR 5/1); weak medium to fine platy structure with patches of light gray (10YR 7/1) blanched silt on plates; friable when moist; many fine tubular pores; few coarse pores; discontinuous patches light gray blanched silt on ped surfaces; pH 5.6; clear smooth boundary. A21 14351

11 to 14 inches. A silt loam with mixed grayish brown (10YR 5/2) and gray (10YR 5/1) 75 percent and gray 14352 (10YR 6/1) 25 percent colors; dry colors about equal 10YR 5/1 and 10YR 6/1; weak fine platy structure;

friable when moist; few very dark gray to black (10YR 3/1 to 2/1) clay films in worm channels; many fine

and few coarse tubular pores throughout peds; many 10YR 3/2 iron concretions; pH 6.0; clear smooth boundary.

14 to 17 inches. A silt loam with mixed grayish brown (10YR 5/2) 75 percent and dark grayish brown (10YR 4/2) with some gray (10YR 6/1); dry colors gray (10YR 5/1); also frequent fine patches of 10YR 6/1 to 7/1; A23 14353

weak medium platy structure breaking to weak very fine subangular blocky to blocky structure friable when

moist; common fine tubular pores throughout peds; few coarse pores or worm channels lined with very dark gray (10YR 3/1) to black (10YR 2/1) clay films; many fine very dark grayish brown (10YR 3/2) iron concretions; pH 6.0; clear smooth boundary.

17 to 20 inches. This mixed horizon is composed of 25 percent A2 and 75 percent B2; color of A2 is grayish brown (10YR 5/2 moist) and light gray (10YR 6/1 dry); the B2 is dark grayish brown (10YR 4/2) with few fine faint yellowish brown (10YR 5/6) mottles when moist and grayish brown (10YR 5/2) when dry; B2 and A2 14354

texture is silty clay loam; weak to moderate medium to fine subangular blocky to blocky structure; friable to firm when moist; patchy black (10YR 2/1) to very dark gray (10YR 3/1) clay films; many fine pores in peds; many fine 10YR 3/2 iron concretions; pH 6.5; clear smooth boundary.

20 to 27 inches. Brown (10YR 4/3) heavy silty clay loam to silty clay with few fine prominent clive (5Y 5/3) and few fine distinct yellowish brown (10YR 5/8) mottles; moderate medium prismatic structure which R21 14355

breaks to weak to moderate medium to coarse blocky structure; firm to very firm when moist; predominate overall dry color of ped surfaces is grayish brown (10YR 5/2) which consists of very fine faint mottles of gray and yellowish brown; thick black (10YR 2/1) to very dark gray (10YR 3/1 moist) continuous clay

films; few fine tubular pores and some root tracks on clay films; common fine pores inside peds are lined

SOIL Darwin clay SOIL Nos. 850111-51-7 LOCATION Lawrence County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 501324 - 501328

(ln,)	carbon Pct.	Pct.			as CaCO <sub>3</sub>	as Fe	g/cc	i≼ bar g/cc	Oven dry	COLE	Pct.	3€ bar Pet.	15 bar Pct.		WRD in/in		(1:1) KCI	(1:1) <b>8.</b> H <sub>2</sub> O
Depth	6A1a Organic	Nitrogen	C/N		Carbonate			Bulk densit	4Alh	4D1	V	Vater conte	4B2		4C1		pH 8Clc	8Ç1a
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	<del> </del>		+3.3	70.2		V.1		0.1	0,2		32.5	11.1	0.3					_
25-32 32-44 44-55	C	0.6	42.6 43.3	56.8 56.2	-	9.1 9.1	0.1	0.2	0.2	8.01	31.8	11.1	0.4			-	-	_
25-32	A	0.6	42.1	57 <u>-3</u>	-	0.1	0.1	0.2	0.2	10.6	31.5	10.9	0.4	•	1	_	<b>)</b>	)
0-15 15-25	Al A	0.8	42.1 41.4	57.1 58.0	0.1	0.1	0.1	0.2	0.3	9.9	32.2	10.3	0.5			-		ŀ
	<u> </u>		0.002)			Pe	t. of << 2 :	mm					<u></u>			Pct.		t. of 6mm
Depth (In.)	Horizon	\$and (2-0.05)	Sitt (0.05-	Clay ( < 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5–0.25)	Fine (0.25–0.1)	Very fine (0.1-0.05)		Int. III (0.02-	Int. II (0.2–0.02)	(2-0.1)	İ	Cm	>- 2	2 - 19	19-7
	1	<del> </del>	Total	<del></del>			_	Sand	Γ	Si		1			382	Coa 2A2	se fragme	nts 3B
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Soil Type: Darwin clay Soil No.: S50Ill-51-7

Vegetation: Lawrence County, Illinois. T2N, R12W, Sec. 8, SW 1/4, NE 40.

Vegetation and land use: Alfalfa
Slope and land form: Less than 0.2 percent.

Sampled by and date: N. M. Mortland, E. G. Knox, and J. B. Fehrenbacher. August 7, 1950.

Horizon and Beltsville Lab. No.

O to 15 inches. Very dark gray (10YR 3/1) silty clay. A]

501324

15 to 25 inches. Dark gray (10YR 4/1) and gray (10YR 5/1) silty clay.

501325

25 to 32 inches. Dark gray (N 4/) and dark grayish brown (2.5Y 4/2) silty clay.

501326

32 to 44 inches. Light gray (5Y 7/1) and olive (5Y 4/3) mottled with yellowish brown (10YR

501327 5/6) silty clay.

44 to 55 inches. Gray (5Y 6/1), olive (5Y 5/3), and yellowish brown (10YR 5/6) silty clay

501328 high in lime.

	10-64			SOIL CONSERVATION SERVICE
	SOR Parwin silty clay	SOIL Nos. SESIII-51-1 LOCATIO	N Inwrence County.	Illinois
	SOIL SURVEY LABORATORY Lincoln, Nebraska	LAB. N		May 16, 1966
	General Methods: 1A, 1Blb, 2Al, 2B	CAB. N	13	
	Total	Size class and particle diameter (m Sand Sitt	m) a 3A1	Coarse fragments 2 A2
		<del>                                     </del>	t. 133   fat. 13	
	Depth   Horizon   Sand   Sift   Clay Very   Coars   Clay   Clay   Clay   Coars   Clay   Coars   Clay   Cl	l la o si lo e o acilio as o vilo e o silo os o acilio s		> 2 2 - 19 19 - 76
	<del>   </del>	Pct. of << 2 mm	×	Pct.
	0-7 Ap 4.3 41.8 53.9 0.1	0.1 0.2 1.6 2.3 8.9 32	.9 12.2 2.0	-
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Soil type: Darwin Silty Clay

Soil Nos.: \$63 Ill-51-1

Location: Lawrence County, Illinois, 320 feet south of road center and 110 feet east of NW corner of NE of Section 6, T4N, R10W.

Vegetations and use: Cropland (Lespedeza and weeds).

Slope and land form: Level. Probably former channel of Wabash River--about 1 mile wide and about 2 miles west of present channel.

Drainage and permeability: Poorly drained with slow surface run-off; very slow permeability.

Parent material: Alluvium

Described and sampled by: L. E. Tyler, G. O. Walker, and I. Jorgensen, October 18, 1963.

Horizon and Lab. Nos.

m

Ap 0-7 inches, very dark gray (10YR 3/1) to very dark grayish brown (10YR 3/2) silty clay; weak, very fine LSL 19325 granular structure in upper part and moderate fine and medium uncoated blocks in lower part (blocks UIL 19438 probably due to compaction); very hard; slightly acid; abrupt smooth boundary.

A3 7-14 inches, very dark gray (2.5Y 3/1) silty clay to clay with few, fine faint to distinct dark yellowish LSL 19326 brown (10YR 3/4 to 4/4) mottles in ped interiors only; weak, medium prismatic structure breaking to UIL 19439 moderate medium blocky; extremely firm; neutral; gradual, smooth boundary.

B21g 14-24 inches, dark gray (2.5Y 4/1) silty clay to clay with common, fine to medium, distinct dark yellowish LSL 19327 brown (10YR 4/4) and few, fine, faint yellowish brown (10YR 5/6) mottles principally in ped interiors; UIL 19440 weak medium prismatic structure breaking to moderate, medium and coarse blocks; extremely firm; neutral; gradual smooth boundary.

B22g 24-33 inches, dark gray (5Y 4/1) silty clay to clay with common fine to medium, distinct yellowish brown LSL 19328 (10YR 5/4 and 5/6) mottles principally in ped interiors; weak coarse prismatic structure breaking to moderate, medium blocks; extremely firm; few fine Fe-Mn concretions and few hard lime concretions (about 5 mm. in diameter); neutral to mildly alkaline; gradual smooth boundary.

B23g 33-40 inches, gray (5Y 5/1) silty clay to clay with common, medium and fine, distinct yellowish brown LSL 19329 (10YR 5/6) mottles principally in ped interiors; weak, coarse prismatic structure breaking to weak to underste, medium blocky; extremely firm; common to many, hard lime concretions (about 5 mm. in diameter) incressing in number in lower part of horizon and few Fe-Mn concretions; mildly alkaline; abrupt wavy boundary

B24g 40-46 inches, same as horizon above; separated for sampling purposes. LSL 19330 UIL 19443

B3g 46-56 inches, gray (5Y 5/1) heavy silty clay loam with many, fine, distinct brown (7.5YR 4/4) and strong LSL 19331 brown (7.5YR 5/6) mottles; weak, medium and coarse blocky structure; very firm; mildly alkaline; gradual, ull 19444 smooth boundary.

Cg 56-68 inches, gray (57 5/1) light to medium silty clay loam, with many, fine and medium, distinct LSL 19322 yellowish brown (10YR 5/6 and 5/8) mottles; massive; firm to friable; mildly to moderately alkaline.

Remarks: Colors described for moist soil. Matrix did not effervesce with acid in any horizon,

From 7 to 46 inches, peds may have thin clay films but difficult to determine in the field whether oriented clay is actually present on the peds.

Krotovina (crayfish tunnels) are prominent in B3g and Cg and evident in B22g and B23g. Lime concretions are often not present in Darwin soils and their occurrance is not readistable.

	SOIL	SURVEY	LABORAT	ORY Line	oln, Nebr.	***************************************	September	1958
	SOIL	TYPE Do	mmer ty clay loam	LOCAT	ION Cha	mpaign Coun	ty, Illinoi	<b>S</b>
		SOIL NOS.						***************************************
. 1 <u> </u>	DEPTH		PARTIC		UTION (In tam.	) (per cent)	2A2	техтиваь
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Soil type: Drummer silty clay loam

Soil Nos.: 557[1]-10-1
University of Illinois Laboratory Nos.: 18066 through 18073.

Location: Champaign County, Illinois; 245 feet north and 135 feet east of corner post in southwest corner of Agronomy farm at the University of Illinois, 5W160, 5W40, 5W40, 5W40 of Section 19, T19N, RGE.

Classification: Humic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Bluegrass. Climate: Humid temperate. Slope: 1/2 percent to west. Erosion: None.

Elevation: Approximately 710 feet.

Parent material: 40 to 60 inches of Peorian loess on medium-textured outwash of Wisconsin age.

Sampled by: G. O. Walker, R. E. Bourland, and R. H. Jordan, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 23, 1957.

Horizon and Lincoln Lab. Number

O to 7 inches. Black (10YR 2/1 moist) very light silty clay loam; weak fine granular structure; friable when moist; boundary gradual and smooth; pH is 5.8; roots many; some foreign silty dark gray (10YR All 6940 3.5/1 moist) pockets occur here, which were drier than surrounding soil.

7 to 14 inches. Black (10YR 1/1 moist) light silty clay losm; moderate fine subangular blocky structure breaking to weak fine granular; friable when moist; boundary clear and amooth; pH is 6.5; many roots. A12 6941

RI 14 to 19 inches. Very dark gray (10YR 3/1 moist) heavy silty clay loam with few fine faint very dark grayish brown (2.5Y 3/2 moist) mottles; moderate fine to medium subangular blocky structure; firm when 6942 moist; boundary gradual and smooth; pH is 6.5; roots many.

19 to 25 inches. Very mark gray (2.5Y 3/1 moist) heavy silty clay loam with common fine yellowish brown (10YR 5/4 to 5/6 moist) mottles; moderate fine prismatic structure breaking to moderate fine R21 6943 blocky; firm when moist; boundary gradual and smooth; pH is 7.0; very few pebbles; roots common; many wormholes.

25 to 32 inches. Yellowish brown (10YR 5/4 to 5/6 moist) silty clay with many medium distinct grayish B22 6944 brown (2.5Y 5/2 moist) mottles; weak to moderate fine to medium prismatic structure breaking to moderate fine blocky; thin discontinuous dark gray (2.5Y 4/1 moist) clay skins; firm when moist; boundary gradual and wavy; pH is 7.8; roots few; root holes common with very dark gray (10YR 3/1 moist) fillings; very few pebbles.

**E23** 32 to 39 inches. Yellowish brown (10YR 5/4 to 5/6-5/8 moist) silty clay loam with many medium distinct gray (2.5Y 5/1 moist) mottles; weak medium prismatic structure breaking to weak medium blocky; thin discontinuous dark gray (2.5Y 4/1 moist) clay skins; firm when moist; boundary clear and wavy; pH is 6945 7.8; roots few, occasional pebbles; root channels filled with very dark gray (10YR 3/1 moist) material.

39 to 46 inches. Yellowish brown (10YR 5/6 to 5/8 moist) silt loam with common medium distinct gray 6946 (2.5Y 5/1 moist) mottles; massive; firm when moist; boundary to horizon below is abrupt and wavy; pH is 8.0; few root channels filled with dark yellowish brown (10YR 3/4 moist) material; few thin discontinuous dark gray (10YR 4/1 moist) clay skins; few pebbles.

46 to 60 inches plus. This is a stratified horizon having layers of loam, sandy loam, and fine gravelly loam; the coarse sandy loam is mostly dark gray (10YR 4/1 moist); the loam and sandy loam is olive brown to light olive brown (2.5Y 4/4 to 5/4 to 5/6 moist) streaked with gray (N 5/ moist); pH is 8.0; massive to single grain structure; friable when moist. -6947

pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas start at 14 inches and extend to bottom of pit (60 inches). The fillings are black (10YR 1/1 moist) and number 2 or 3 per square foot of horizontal surface. Loose loam till was encountered at 72 inches.

SOIL SURVEY LABORATORY Lincoln, Nebr. September 1958 LOCATION Champaign County, Illinois SOIL TYPE Drummer silty clay loam SOIL NOS. <u>\$57111-10-2</u> **LAB. NOS.** 6948-6956 PARTICLE SIZE DISTRIBUTION (in mm.) (per cent) lBla 2Å2 HORIZON COARSE COARSE MEDIUM FINE SAND SAND SAND VERY FINE SAND DEPTH INCHES TEXTURAL CLASS SILT CLAY > 2 2-1 1-0.5 0.5-0.25 0.25-0.10 0.10-0.05 0.05-0.002 < 0.002 0.2-0.02 0.02-0.002 < 1.9mm 59.6 33.8 24.7 37.1 0.6a 1.2a 1.4a 2.3a 1.la Allp 0-7 0.8a 60.0 35.0 23.7 37.9 0.6a 60.5 36.1 23.0 38.7 0.5a 0.9a 1.0a 1.8a 0 1a 0 7a 0 7a 1 3a sicl Al2 7-10 Щ 

Soil type: Drummer silty clay loam

Soil Nos: : S57111-10-2

Location: Champaign County, Illinois; 755 feet west of southeast corner of Section and 36 feet north of center of east-west gravel road, SE160, SE40, SWLO of Section 29, T19N, R7E.

Classification: Humic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Corn. Climate: Humid temperate. Slope: 1/2 percent to west.

Erosion: None.

Elevation: Approximately 710 feet.

Parent material: 30 to 60 inches of Peorian loess over loam Wisconsin till of Tazewell age.

Sampled by: R. E. Bourland, G. O. Walker, and R. H. Jordan, Soil Conservation Service; J. D. Alexander, University of Illinois, October 24, 1957.

Horizon and Lincoln Lab. Number

A11p 6948 0 to 7 inches. Black (10YR 2.5/1 moist) silty clay loam; weak fine granular structure; friable when moist; boundary gradual and smooth; pH is 7.8; roots many.

7 to 10 inches. Black (10YR 2.5/1 moist) heavy silty clay loam; weak fine to medium granular; friable A12 6949 when moist; boundary clear and smooth; pH is 7.8; roots many.

10 to 16 inches. Dark gray (2.5Y 4/1 moist) heavy silty clay loam; weak fine granular to weak fine sub-angular blocky structure; friable to firm when moist; boundary clear and wavy; pH is 8.0; roots few; thin discontinuous dark gray (2.5Y 4/1 moist) clay skins; some black (10YR 2/1 moist) stains. 6950

B21 16 to 22 inches. Dark grayish brown (2.5Y 4.5/2 moist) heavy silty clay loam with few fine faint light olive brown (2.5Y 5/4 moist) mottles; moderate fine subangular blocky structure; firm when moist; 6951 boundary clear and wavy; pH is 8.0; roots few; thin discontinuous dark gray (5Y 4/1 moist) clay skins; occasional pebble.

**B22** 22 to 29 inches. Dark grayish brown (2.5Y 4/2 moist) very heavy silty clay loam with common medium distinct gray (10YR 5/1 moist) mottles; moderate medium prismatic structure breaking to moderate medium 6952 blocky; very firm when moist; boundary diffuse and smooth; pH is 7.5; roots common on major ped faces; thin discontinuous dark gray (5Y 4/1 moist) clay skins; some black (10YR 2/1 moist) organic stains; few small iron-manganese concretions.

B23 29 to 36 inches. Gray (2.5Y 5/1 moist) silty clay loam with many medium distinct yellowish brown (10YR 5/4 to 5/6-5/8 moist) mottles; moderate medium prismatic structure breaking to moderate medium 6953 to coarse blocky; firm when moist; boundary clear and wavy; pH is 8.0; roots common; black (loyR 2/1 moist) organic stains.

36 to 48 inches. Light brownish gray (2.59 6/2 moist) silt loam with many medium distinct yellowish brown (1097 5/4 to 5/6-5/8 moist) mottles; massive; friable when moist; boundary to horizon below is с 6954 abrupt and smooth; pH is 8.0; roots few; pebbles few.

48 to 53 inches. Mixed yellowish brown (10YR 5/8 moist) and gray (N 5.5/ moist) loam; massive; 6955 friable when moist; boundary to horizon below is abrupt and smooth; roots few; pebbles common; calcareous.

m 53 to 63 inches. Mixed yellowish brown (lork 5/6 moist) and gray (N 5.5/ moist) light loam to sandy clay loam; massive; slightly sticky when wet; calcareous; roots, none to occasional; pebbles, many. 6956

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas start in Bl (10 inches) and extend into D2 horizon (63 inches). Some tendency for them to end at calcareous till; they are mostly 1 to 3 inches wide and number 5 to 6 per square foot of horizontal surface. The upper part of the glacial till appears to have been somewhat mixed by water action.

SOIL TYPE Drummer LOCATION Champaign County, Illinois silty clay loam

SOIL NOS. <u>\$57111-10-3</u> **LAB. NOS.** <u>6957-6965</u>

d for 10046664 1064 <b>130</b> 30	, \$ 1.074 2 2 4 4 2 4 4 4 7 9 7	1Bla		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	r cent)	3A1		16991119191 <del>191</del>
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAI CLASS
		2-1	1-0.5	0.5-0.25	0. 25-0. 10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	Q02-Q002	(<19mm	)
0-8	Allp	0.2a	3.0a	7.6a	13.8a	5.0a	46.4	24.0	30.6	27.0	Tr.	1.
8-13	A12	0.3a			12.5a	4.5a	47.7	25.2	29.9	28.0	Tr.	1
13-17	Bl.	0.2a	2.7a	6.4a	10.8a		49.6	26.4	28.4	29.9		1
17-21	B21	0.2a	2.3a			3.3a	51,4	28.6	26.6	32.1	-	sicl/c
21-26	B22	0.la	1.6a				56.6	30.0	26.2	35.6	-	sicl
26-35	B23	0.3a	1.9a				60.6	21.8	34.9	33.2	Tr.	sil
35-41	Cl	0.5a	3.6a		15.3b		51.0	14.3	41.6	23.1	Tr.	sil
41-49	C2	0.3a			33.1ъ		23.7	7.6	40.3	10.6	Tr.	fsl
49-60+	<b>c</b> 3	0.4a	2.4a	5.3b	9.6b	3.3b	69.5	9.5	46.3	30.9	3	sil
*****************	Hq	114144944444444	ORGA	NIC MA	TTER	Free	ELECTRI- CAL	6Ela	1231711161162499)	C	WATER	CONTEN
8Cla			6Ala	6Bla	· · · · · ·	Iron	CONDUC-	6.60	CABELLIA	Bulk	c	₫
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	1;5	1:10	CARBON	GEN	C/N		MILLIMHOS	alent	SOIL		State	15-Bar
1:1			%	%			PER CM #25°C.	%		g/cc_	%	\$
7.5			3.07	0.274	11			-		1.09	18.2	15.2
7.6			1.41	0.138	10			-	Ī			13.2
7.7			0.83	0.082	10	ļ		-	<u> </u>	1.46	14.1	12.1
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7.9	Ī	İ	0.23		İ	İ		9	ļ	į		9.7
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8.3	•		0.06	•	1		Ì	15 28	<u> </u>	I		2.2
8.3			0.09	•	Ī			I	į	1.75	14.1	4.5
5Äla		EXTRAC		CATIONS		: 144111 PARTE 14414141	5C3	5Bla	5A3a	1		
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XCHANGE		<u> </u>		_No.	_ <u>k_</u>	<u>!</u>	Sat.%	Ext.	Ext.	<u>i</u> _	i	SATU-

Soil type: Drummer silty clay loam

Soil Nos. : S57111-10-3

Classification: Humic Gley. Natural drainage: Poor.

Docation: Chamcaign County. Illinois: 800 feet west of southeast corner of Section and 83 feet north of center of

Native vegetation: Wet prairie. Present vegetation: Corn. Climate: Humid temperate. Slope: O percent. Erosion: None. Elevation: Approximately 670 feet. Parent material: Medium-textured Wisconsin outwash. Sampled by: R. E. Bourland and R. H. Jordan, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 25, 1957. Horizon and Lincoln Lab. Number O to 8 inches. Black (10YR 2.5/1 moist) light silty clay loam; weak medium granular structure; Allo friable when moist; boundary abrupt and smooth; pH is 8.0; roots common. 6957 8 to 13 inches. Very dark brown (10YR 2/2 moist) silty clay loam; weak medium granular structure; A12 friable when moist; boundary clear and smooth; pH is 8.0; roots and wormholes common. 6958 13 to 17 inches. Very dark gray (2.5Y 3/1 moist) silty clay loam with few fine faint yellowish brown (10YR 5/4 moist) mottles; weak medium granular to weak fine subangular blocky structure; friable when moist; boundary clear and smooth; pH is 8.0; roots common; few wormholes. 6959 17 to 21 inches. Very dark gray (2.5Y 3/1 moist) silty clay loam with common fine distinct yellowish brown (10YR 5/4 to 5/6 moist) mottles; weak very fine to fine subangular blocky structure; firm when moist; boundary clear and smooth; pH is 8.0; roots few; common black (10YR 2/1 moist) worm casts; **R21** 6960 few small iron-manganese concretions. 21 to 26 inches. Dark gray (2.5Y 4/1 moist) silty clay loam with common medium distinct light olive brown (2.5Y 5/4 moist) and yellowish brown (10YR 5/4 to 5/6 moist) mottles; moderate fine subangular B22 6961 blocky structure; firm when moist; boundary clear and wavy; pH is 8.0; roots few; few black (107R 2/1 moist) worm casts; common small iron-manganese concretions; thin discontinuous very dark grayish brown (2.5Y 3.5/2 moist) clay skins. 26 to 35 inches. Dark gray (2.5Y 4/1 moist) light silty clay loam with many medium to coarse distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; weak fine prismatic structure breaking to moderate B23 6962 weak in blocky; firm when moist; boundary clear and smooth; pH is 8.0; roots few; few Wormholes; few small iron-manganese concretions; thin discontinuous very dark grayish brown (2.5Y 3.5/2 moist) clayskins. 35 to 41 inches. Mixed gray (2.5Y 5/1 moist) and yellowish brown (10YR 5/8 to 5/6 moist) gritty C1 silt loam; massive; firm when moist; boundary clear and wavy; pH is 8.0; roots few, few wormholes; 6963 common small iron-manganese concretions; an occasional lime concretion of 1/2- to 1-inch diameter; calcareous. 41 to 49 inches. Gray (2.5Y 6/1 moist) fine sandy loam with many medium to coarse distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; massive; very friable when moist; boundary clear and smooth; 6964 roots very few; few small pebbles; occasional lime concretions; calcareous. 49 to 60 inches plus. Gray to light gray (2.5Y 6/1 moist) heavy silt loam with few coarse prominent yellowish brown (10YR 5/8 to 5/6 moist) mottles; massive; friable when moist; pH is 8.0; a hard con-¢3 6965 cretionary layer of lime about 2 inches thick occurs somewhat irregularly at a depth of 48 to 50 inches, color is white (N 8/ moist) on the outside, light gray (N 7/ moist) in the center, and a dark gray (10YR 4/1 moist) coating around the center portion; calcareous.

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas in the Bl (13 inches) and extend to sampling depth (60 inches) with the majority of them ending in the C2 (41 to 49 inches); they are generally 1 to 2 inches in diameter and number about 2 per square foot on a horizontal surface. Color of krotovinas ranges from very dark gray (10YR 3/1) to dark gray (2.5Y 4.5/1). Ground water at 70 inches.

SOIL TYPE Drummer LOCATION Iroquois County, Illinois silty clay loam

SOIL NOS.

857111-38-1 LAB. NOS. 6933-6939

·····		IBla		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm-) (64	r cent)3	<u> </u>		, , , , , , , , , , , , , , , , , , ,
DEPTH INCHES	HORIZON	SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 >2	TEXTURA CLASS
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0,002	< 0.002	0.2-0.02	0.02-0.002	<19mm	
0-8	Alp	0.3a	1.8a	3.1a	7.4a	4.7a	48.6		23.8	33.1	Tr.	sicl
8-11	A3	1.3a	2.2a	2.6a	5.5a.	3.6a.	50.0		21.6	34.7	Tr.	sicl
11-13	Bl.	0.8a	2.0a	2.9a	5.9a	3.8a	50.1	34.5	23.9	32.8	Tr.	sicl
13-18	B21	0.6a	1.2a	1.8a	3.6a	2.6a	51.1	39.1	21.0	34.5	Tr.	sicl
18-23	B22	0.8a	2.la	2.9a	6.la	4.3a	49.4	34.4	21.3	35.4	Tr.	sicl
23-28	B23	1.3a	2.3a	3.la	6.la	4.7a	50.2	32.3	22.1	35.9	Tr.	sicl
28- <del>11</del> +	С	1.7b	3.3b	3.7b	7 <b>.</b> 8ъ	5.2b	54.1	24.2	24.1	39.1	Tr.	sil
) ## 5 PP # 5 PP		.4444444444444444444444444444		NIC MA		manamana Trop	ELECTRI-	<b>б</b> ЕТа	11::11::11:11		WATER	CONTE
8cla	PH		6Ala			Free Iron	CAL CONDUC-			Bulk	WATER	GON TE
لتغلبان	i		ORGANIC			Fe <sub>2</sub> 03%	TIVITY	CoCO <sub>3</sub>	GYPSUM me./100g. SOIL.	Den-	Meld-	
	1:5	1:10	CARBON	GEN	C/N	102036	EC×103 MILLIMHOS	equiv- alent	SOIL.	sity	State	15-B
1:1			%	%			PER CM	%		g/cc	%	%
6.0	i		2 07	0 30E	10					; '	29.4	17.7
6.4				0.325 0.186	12					7.71	€7 <b>.</b> 4	18.7
6.6				0.142	11 10							16.5
6.9				0.081				_	•	1.34	18.1	16.4
7.3				0.052	9					1.54	10.1	14.7
7.5				0.036	8					1.46	16.0	13.4
8.0			0.32	0.000	Ü			21	i	•	13.9	10.0
0.0			0.52					ET		1.07	73.2	10.0
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5Ala		EXTRAC		CATIONS		501	5C3	l <u>-</u>		803		
CATION	6N2b	602ъ	6Ша	6P2a	692a	Base	Base	Sum	Sum	- 400		MOISTUR
EXCHANGE CAPAÇITY	Co	Ma	н	No	к	Sat.%	Sat.%	Exct.	•	Ca/Mg		SATU-
NH <sub>U</sub> Ac		Ť	alents per	700	į .	NH <sub>U</sub> AC	•	Bases	4			RATION
			Greens por	:	, <del>-</del>		Cations	me/	,	ļ <u>-</u>		<b>%</b>
34.6	25.1	6.9	10.8	-	0.4	94	<u>7</u> 5			3.6		ĺ
28.7	20.3	6.5	5.4	-	0.4	95	83	27.2	32.6	3.1		ļ
26.3	18.8	6.2	5.0	-	0.4	96	84	25.4	30.4	3.0		l
	20.0	7.7	3.3	0.1	0.4		90	28.2	31.5			į
27. <u>7</u>	•		. 25	_	0.3	į	90		25.3			Ì
21.8	16.0	6.5	2.5	•						•	•	Ì
	•	5.8	1.2	-	0.3		94	19.8	21.0	į	<b>;</b>	5
21.8	16.0		•	Ī			94	19.8	21.0	144 144 144 144 144 144 144 144 144 144		
21.8 17.9 9.1	16.0 13.7	5.8 3.4	1.2 0.4	_	0.3	k concr			21.0	1		47 44 44 44 44 44 44 44 44 44 44 44 44 4
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21.8 17.9 9.1 a. Cox b. Cox c. De	16.0 13.7 mon su mon su termine	5.8 3.4 looth looth l d by t d by t d by t	1.2 0.4 light l light l niver: 14:	rown to rown to sty of the sty of	0.3 0.2 o blac o blac Illin 1950	k coner iois. C . (at iois. R	. (Fe-Mi Fe-Mi ore Metl	?) i?) Al iod - I	so fer hland moistr	R. E.	, So1.	Sci.
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Soil type: Drummer silty clay loam

Soil Nos.: 557111-38-1 University of Illinois Laboratory Nos.: 18059 through 18065.

Location: Iroquois County, Illinois; 693 feet south of crossroad and 60 feet west of center of dirt road, NW160, NEHO, SELO of Section 35, T27N, R11W.

Classification: Banic Gley.

Natural drainage: Foor. Native vegetation: Wet prairie.

Present vegetation: Corn. Climate: Rumid temperate. Slope: 1/2 percent to west.

Erosion: None.

Elevation: Approximately 675 feet.

Parent material: None to very thin covering of Peorian loess over loam Wisconsin till of Cary age on the Iroquois

lobe.

Sampled by: J. E. Paschke and G. O. Walker, Soil Conservation Service; H. L. Wascher, University of Illinois,

October 21, 1957.

Horizon and Lincoln Lab. Number

0 to 8 inches. Black (10YR 1/1 moist) silty clay loam; weak fine granular; friable when moist; boundary clear and smooth; pH is 6.2; much fresh organic matter mixed in this layer; roots many; there is a 2-inch plow pan (depth 6 to 8 inches) in this horizon, being firm when moist and having moderate medium 6933 angular blocky structure.

A3 6934 8 to 11 inches. Black (10YR 2/1 moist) silty clay losm with streaks of black (10YR 1/1 moist); moderate fine granular; friable when moist; boundary clear and smooth; pH is 6.2; roots common.

11 to 13 inches. Very dark grayish brown (2.5Y 3/2 moist) silty clay loam streaked with black (10YR 6935 2/1 moist); moderate fine subengular blocky; firm when moist; boundary gradual and wavy; thin discontinuous clay skins; roots common; occasional small pebbles and sand grains; some black (10YR 2/1 moist) organic coatings.

13 to 18 inches. Dark grayish brown (2.5Y 4/2 moist) silty clay loam with common fine faint yellowish B21 6936 brown (10YR 5/6 moist) mottles; thin discontinuous black (N 2/ moist) organic and clay skins; moderate fine subengular blocky structure; firm when moist; boundary gradual and smooth; roots common; occasional small pebbles; pH is 6.8.

B22 18 to 23 inches. Dark grayish brown (2.5Y 4/2 moist) silty clay loam with many medium distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; moderate to strong fine to medium subangular blocky structure with ped faces stained with dark gray (2.5Y 3.5/1 moist); firm when moist; boundary gradual and smooth; 6937 pH is 7.0; roots few; occasional small pebbles; many fine holes coated black (10YR 2/1 moist).

B23 23 to 28 inches. Grayish brown (2.5Y 5/2 moist) silty clay losm with many medium distinct yellowish 6938 brown (10YR 5/6 to 5/8 moist) mottles; weak to moderate prismatic structure breaking to weak to moderate medium blocky; firm when moist; boundary to horizon below is clear and wavy; pH is 7.5; roots few; pebbles common; many fine channels; some organic coating on peds.

28 to 44 inches plus. Gray (5Y 5/1 moist) loam with many medium distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; massive; firm when moist; calcareous; roots few; pebbles numerous in this glacial 6939 till; few iron-manganese concretions,

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas start in the H21 (11 inches) and extend to sampling depth (44 inches).

SOIL TYPE Drummer LOCATION Iroquois County, Illinois silty clay loam

SOIL NOS. <u>\$57111-38-2</u> **LAB. NOS.** <u>7331-7338</u>

		lBla		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (p	er cent)	3 <b>AI</b>		
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY	***		2A2 > 2	TEXTURAL CLASS
		2-1	1-0,5	0,5-0,25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	<b>Q02-Q00</b> 2	(<19mm	<b>)</b>
	Allp	0.2a	0.3a	1.4a	10.9a					24.5	Tr.	cl
6-13	Al2	0.la	0.4a	1.3a	10.2a					24.3	Tr.	cl
— <del>-</del> – i	B1.	O.la	0.3a	1.2a	9.6a					24.5		cl
	B21	0.la	0.3a	1.3a	9.9a					26.3		c1
-,	B65	0.2a	0.3a	0.9a	6.2a				~	34.2	-	sicl
	<b>18</b> 3		0.4a	1.9a						24.6	-	1
~ -	C1.	0.la	0.3a		7.26				3	23.5	-	pil
51-55+	C2	O.la	0.4a	0.86	10.16	17.2b	49.8	21.6	50.1	24.0	-	1
							**************			************		
	ρΗ		ORG	MIC MA	TTER	Free	ELECTRI-	6Ela		c	WATER	CONTENT
8Cla	рΗ			ANIC MA	TTER	Free Iron	CAL CONDUC-		CVBeille	<u>c</u> Bulk	WATER C	CONTENT
8c1a			6Ala ORGANIC	6Bla NITRO-	[ [		CAL CONDUC- TIVITY EC × 10 <sup>3</sup>	CoCO3	GYPSUM me./100g.	Bulk Den-	WATER <u>c</u> Field-	
	PH 1:5		6Ala	6Bla NITRO- GEN	TTER C/N	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	GYPSUM me./100g. SOIL	Bulk Den- sity	<u>c</u> Field- State	<u>d</u> 15-Bar
8Cla		1:10	6Ala ORGANIC	6Bla NITRO-	[ [	Iron	CAL CONDUC- TIVITY EC × 10 <sup>3</sup>	CoCO3	me./100g.	Bulk Den-	c Field- State	<u>d</u> 15-Bar %
1:1 7•2		t:10	6Ala organic carbon % 4.20	6Bla NITRO- GEN %	c/n 13	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity	<u>c</u> Field- State	<u>d</u> 15-Bar - % 16.8
1:1 7:2 6:9		1:10	6Ala ORGANIC CARBON % 4.20 2.44	6Bla NITRO- GEN % 0.325 0.204	C/N 13 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc 1.26	Eield- State - % - 17.0	15-Bar 15-8 16.8 16.5
7.2 6.9 7.2		1:10	6Ala ORGANIC CARBON 3 4.20 2.44 0.99	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc	c Field- State	15-Bar 16.8 16.5 13.8
7.2 6.9 7.2 7.5		1:10	6Ala ORGANIC CARBON 78 4.20 2.44 0.99 0.41	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc 1.26	Field-State 17.0	15-Bar % 16.8 16.5 13.8 12.0
7.2 6.9 7.2 7.5 7.6		1:10	6Ala ORGANIC CARBON % 4.20 2.44 0.99 0.41 0.30	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc 1.26	Eield- State - % - 17.0	15-Bar -% -16.8 16.5 13.8 12.0
7.2 6.9 7.2 7.5 7.6 7.9		1:10	6Ala ORGANIC CARBON 3. 4.20 2.44 0.99 0.41 0.30 0.18	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc 1.26	Field-State 17.0	15-Bar 16.8 16.5 13.8 12.0 13.4 8.0
7.2 6.9 7.2 7.5 7.6 7.9 8.0		1:10	6Ala ORGANIC CARBON % 4.20 2.44 0.99 0.41 0.30 0.18 0.19	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3  •quiv- olent	me./100g.	Bulk Den- sity s/cc 1.26 1.62	c Field- State 17.0 13.9	15-Bar % 16.8 16.5 13.8 12.0 13.4 8.0 7.1
7.2 6.9 7.2 7.5 7.6 7.9		1:10	6Ala ORGANIC CARBON 3. 4.20 2.44 0.99 0.41 0.30 0.18	6Bla NITRO- GEN * 0.325 0.204 0.086	C/N 13 12 12	Iron	CAL CONDUC- TIVITY EC×103 MILLIMHOS	CoCO3 equiv- alent	me./100g.	Bulk Den- sity g/cc 1.26	Field-State 17.0	15-Bar % 16.8 16.5 13.8 12.0 13.4 8.0 7.1

Soil type: Drummer silty clay loam

Soil Nos. : S57Ill-38-2 University of Illinois Laboratory Nos.: 18074 through 18081.

Location: Iroquois County, Illinois; 100 feet south and 45 feet west of east quarter corner, SEI60, NE40, NE10, NP22 of Section 16, T26N, RICE.

Classification: Humic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Soybeans. Climate: Rumid temperate.

Slope: O percent.

Erosion: None. Parent material: Medium-textured Wisconsin outwash.

Sampled by: J. B. Fehrenbacher, P. R. Johnson, and J. D. Alexander, University of Illinois, October 29, 1957.

Lincoln Lab. Number

O to 6 inches. Black (10YR 2/1 moist) silty clay losm; sand grains visible; moderate medium angular Alle blocky: firm when moist; boundary abrupt and smooth; pH is 7.2; roots common. 7331

6 to 13 inches. Black (10YR 2/1 moist) silty clay loam; sand grains visible; medium to strong granular A12 7332 structure; friable to firm when moist; boundary clear and smooth; pH is 6.8; roots common; few small iron-manganese concretions.

13 to 17 inches. Very dark gray (10YR 3/1.5 moist) silty clay loam; sand grains visible; moderate to strong medium to coarse granular structure; firm when moist; boundary clear and smooth; pH is 6.8; BJ. 7333 roots common; few small iron-manganese concretions.

17 to 25 inches. Olive gray (5Y 4.5/2 moist) silty clay loam; sand grains visible; with few fine distinct yellowish brown (10YR 5/8 moist) mottles; moderate medium prismatic structure breaking to B21 7334 moderate medium blocky to subangular blocky; firm when moist; boundary clear and smooth; pH is 6.5; occasional small iron-manganese concretions; thin discontinuous olive gray (5Y 5/2 moist) clay skins.

25 to 31 inches. Olive gray (5Y 5/2 moist) silty clay loam; sand grains visible; common fine prominent yellowish brown (10YR 5/8 moist) mottles; moderate to strong medium prismatic structure breaking to 1922 7335 strong medium angular blocky; firm when moist; boundary clear and smooth; pH is 7.5; roots common; moderately thick gray (5Y 5/1 moist) continuous clay skins; occasional iron-manganese concretions.

B3 7336 31 to 38 inches. Gray (5Y 5.5/1 moist) silty clay loam with pockets of clay loam; many medium distinct yellowish brown (10YR 5/6 to 5/8 moist) mottles; weak medium prismatic structure breaking to weak medium angular blocky and subangular blocky; firm when moist; boundary gradual and wavy; pH is 8.0; roots few; thin discontinuous gray (5Y 5/1 moist) clay skins; occasional iron-manganese concretions.

38 to 51 inches. Gray (5Y 5/1 moist) mixed sandy loam, silt loam, and clay loam in pockets with many coarse prominent yellowish brown (10YR 5/6 to 5/8 moist) mottles; massive; friable to firm; boundary Cl 7337 clear and wavy; pH is 8.0; very few roots, occasional iron-manganese concretions.

51 to 55 inches plus. Olive gray (5Y 5/2 moist) mixed sandy loam, silt loam, and clay loam in pockets with many medium prominent strong brown (7.5YR 5/6 moist) and yellowish brown (10YR 5/8 moist) mottles; œ 7338 massive structures; firm when moist; calcareous; occasional iron-manganese concretions.

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas start in Bl (13 inches) and extend to sampling depth (55 inches); they are mostly 1/2 to 2-1/2 inches in diameter and there are about 4 per square foot in horizontal cross section; their color is mostly black (10YR 2/1 moist). No pebbles were observed in the entire profile.

SOIL NOS.  STIII-50-1  PARTICLE SIZE DISTRIBUTION (In man), Corr over) 3-1  PARTICLE SIZE DISTRIBUTION (IN man), Corr over) 3-1  PARTICLE SIZE DISTRIBUTION (In man), Corr over) 3-1  PARTICLE SIZE DISTRIBUTION (IN man), Corr over) 3-1  PARTICLE SIZE DISTRIBUTION (IN man), Corr over) 3-1  PARTICLE SIZE DISTRIBUTION (IN man), Corr over) 3-1  PARTICLE		SOIL	TYPE	E Drug	mer y cla	y losm	L	OCAT	ION	InSell	Coun	ty, Il	linois	97
1810		SOIL	nos.		•	-			LAB.	NOS.	***************************************	6888-6	894	
DEPTH HORIZON COASSE COASSE MEDIUM FINE YERY SAND SAND SAND SAND SAND SAND SAND SAND		**************************************	***************************************			PART	ICLE SIZ	enumaniania E DISTRIE	SUTION (i	n mm.) (e	muuumin Maantii	:::::::::::::::::::::::::::::::::::::	)	11 <b>51</b> 111111111111111111111111111111111
		DEPTH INCHES	HORIZON		1	1	1					<u> </u>		TEXTURAL CLASS
		0-8-	47m		,				;	;	:	-;	A	
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	tra Table		- -											

Soil type: Drummer silty clay loam

Soil Nos.: \$57111-50-1

Soil Nos.: \$57111-50-1

Iocation: LaBalle County, Illinois; 397 feet south of quarter-line fence and 85 feet west into field, SE160, SENO, NEIO of Section 14, T34N, R2E.

Classification: Humic Gley.

Natural drainage: Poor. Native vegetation: Wet prairie.

Present vegetation: Corn.

Climate: Humid temperate. Slope: 0 percent.

Erosion: None.

Elevation: Approximately 620 feet.

Parent material: 40 to 60 inches of Peorian loess over medium-textured outwash.

Sampled by: N. E. Barnes, J. E. Paschke, and D. C. Hallbick, Soil Conservation Service; R. T. Odell, University of Illinois, October 16, 1957.

Horizon and Lincoln Inb. Number

0 to 8 inches. Black (10TR 1/1 moist) silty clay loam; weak medium angular blocky structure breaking Alp 6888 into weak coarse granular; plow sole in lower part; slightly firm when moist; boundary abrupt and smooth;

pH is 8.0; roots common.

8 to 13 inches. Black (10YR 1/1 moist) medium to heavy silty clay loam; moderate fine angular blocky A12 to strong coarse granular structure; slightly firm when moist; boundary clear and smooth; pH is 8.0; 6889

roots common.

13 to 19 inches. Grayish brown (2.5Y 5/2 moist) medium to heavy silty clay loam; moderate fine sub-**B**21 angular blocky to angular blocky structure; slightly firm when moist; boundary clear and smooth; pH is 7.0; roots common; some black (10YR 1/1 moist) organic coatings. 6890

19 to 26 inches. Grayish brown (2.57 5/2 moist) silty clay loam; common fine faint light clive brown (2.57 5/6 moist) mottles; moderate medium angular blocky structure; slightly firm when moist; boundary B22 6891

clear and smooth; pH is 7.0; roots common; few small iron-manganese concretions; more clay and less

black (10YR 2/1 moist) organic coatings than in horizon above.

26 to 38 inches. Olive gray (5Y 5/2 moist) silty clay loam with many fine distinct light clive brown B3 6892 (2.5Y 5/6 moist) and yellowish brown (10YR 5/8 moist) mottles; moderate fine to medium prismatic

structure breaking into moderate medium angular blocky; firm when moist; boundary abrupt and wavy; pH is 7.0; roots common; many small iron-manganese concretions; some dark graylah brown (2.5Y 4/2 moist)

clay and organic coatings.

02 6893 38 to 50 inches. Gray (57 5/1 moist) fine loam to silt loam with lenses of loam; many medium distinct light olive brown (2.57 5/6 moist) and yellowish brown (10YR 5/8 moist) mottles; massive; friable when

moist; calcareous; boundary abrupt and wavy; roots few.

50 to 61 inches plus. Mixed pale yellow (5Y 7/3 moist) 45 percent, yellowish brown (10YR 5/8 moist)

SOIL TYPE Drumer LOCATION Is Salle County, Illinois

silty clay loam

SOIL NOS. <u>\$57111-50-2</u> LAB. NOS. <u>6895-6902</u>

<del>1</del> 457-1402941:10540274		1Bla					UTION (in					
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAL CLASS
		2-1	1-0.5	0.5-0.25	0. 25-0. 10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	002-0002		
0.7	Λ7m	0.2a	0.6a	0.6b	1.0b	1.0c	61.2		27.7	,		sicl
	Alp Al2	0.2a	0.0a 0.5a		1.1b	1.0c	60.6		27.1	35.1 35.3	Tr.	sicl
13-19		0.18		0.40	1 .	1.1c	61.7		26.4		-	
	B21	_	0.3c		0.9c 0.2c				26.2	36.9	_	sicl
19-23	B22	~ ~ ""	0.10	0.lc		0.5c	65.0	34.1	ī	39.4	-	sicl
_ = =	B23	0.15	0.2b	0.1c	0.40	0.90	66.8	31.5	30.5	37.4	-	sicl
	<b>B</b> 3		0.16	0.2c	0.4c	1.5c		27.2	36.0	36.3	_~	sicl
37- <del>44</del>	C	0.16	0.50	0.7c	1.9c	2.6c	65.0		35.6	33.1	Tr.	sicl
44-50+	D	0.8d	1.7d	2.1d	6.6d	4.9đ	46.9	37.0	22.0	33.6	Tr.	sicl
************		***********			••••••••••••••••••••••••••••••••••••••	**** <u>**</u> ************			91334149 <b>00000</b>	***********		
	, pH			NIC MA	TTER	Free	ELECTRI-	6Ela		<u>e</u>	WATER	CONTEM:
8cla			6Ala	6Bla		Iron	CONDUC-	CoCO <sub>3</sub>	GYPSUM	Bulk	<u>e</u>	<u>f</u>
			ORGANIC	NITRO-	-4.	Fe <sub>2</sub> O <sub>3</sub> %	EC×103	equiv-	me./100g.		Field-	
	1:5	1:10	CARBON	GEN	C/N		MILLIMHOS	alent	SOIL	sity	State	15-Bar
1:1			%	%			PER CM	%		g/cc	<u>""</u>	%
5.9			L 56	0.323	14			<u> </u>	į	1.12	24.6	18.7
6.3				0.193	12			_			27.0	19.1
					2 :			-				17.0
6.8				0.086				-		7 26	~ °	16.1
7.1				0.039	11			_		1.36	20.8	
7.4			•	0.027	10			_				15.1
7.5			0.21					-			a=	12.3
7.6			0.24								25.6	12.5
7.7			0.40					13		1.58	22.9	17.2
5Ala			TABLE			5 <b>C</b> 1	5 <b>C</b> 3	581a		8 <b>D</b> 3	***************************************	38868888888888888888888888888888888888
	6Nab		6ніа	6P2a		Base	Base	Sum	Sum			
CATION EXCHANGE		0020	مسان	ULZA	Own	Sat.%	Sat.%	Ext.	Ext.	Ca/Mg		MOISTURE
CAPACITY	Co	Mg	н	No	K		, ,	Bases	•	Ca/ Ing		AT SATU- RATION
NHLAC		millieauiv	: alents per	: 300a. soil	·	NH <sub>1</sub> Ac						Į
			:				Cations	me/				%
39.6	29.2	7.8	10.0	-	0.7	95	79			3.7		
34.4	24.6	8.5	6.3	-	0.6	<b>9</b> 8	84	· ·	÷	2.9		
	19.8	8.9	3.8	0.1	0.5		88	29.3	33.1			
27.0	18.2	9.4	1.6	0.1	0.4		95	28.1	29.7			
24.9	17.1	9.4	1.2	0.1	0.6		96	27.2	28.4			
20.6	14.0	7.8	0.8	0.1	0.6		96	22.5	23.3			
~~~	12.6	7.1	0.4	0.1	0.6		98	20.4	20.8			
		<u>-</u>	ا ما	<u> </u>	0.4				į	İ		į
	1	6.5	0.4	; -			:	1		•		Ī
18.4 12.9		-	į .	m to 1	•	oner.	Fe-Mn?)		İ			I
18.4 12.9 a. Mar	ty smoo	th dan	k brov		lack o	oner. (		<b>1</b>	: : : :			
18.4 12.9 a. Mar b. Con	inon su Ty suroc	th dan ooth d	k brov ark bi	own to	lack o	coner.	(Fe-Mn	<b>†</b> )				
18.4 12.9 a. Mar b. Con c. Fer	ty smoot	th dan ooth d h dark	k brov ark bi brow	own to	lack of black lack co	coner.	(Fe-Mn e-Mn?)	İ	au Ce	10- cc	err.	
18.4 12.9 a. Mar b. Cor c. Fer d. Fer	ty smoot mon smoot smoot	th dan ooth d h darl h darl	k brov lark bi browi browi	own to	lack of black lack co lack co	coner. ner. (F ner. (F	(Fe-Mn° e-Mn?) e-Mn?)	Also :				©o.⁺
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18.4 12.9 a. Mar b. Cor c. Fer d. Fer e. Det	iy smoot mon sn smoot smoot enmine Joc. An	th dan ooth dark h dark d by t d by t d by t	k brown brown mivers 14:5	own to to b to b ity of 61-366	lack of black collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack collack	concr. ncr. (F ncr. (F ois. C . (at ois. R	(Fe-Mn°) e-Mn°) e-Mn°) ore Metl	Also : iod - 1 State"	hland, moist	R.E. ire)	, Soi	
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Soil type: Drummer silty clay loam

Soil Nos. : S57111-50-2

University of Illinois Imboratory Nos.: 18036 through 18043.

location: IaSalle County, Illinois; 100 feet east of quarter-line fence on north side of test road, SW160, SE40,

SW10 of Section 34, T34N, R3E.

Classification: Humic Gley. Natural drainage: Foor. Native vegetation: Wet prairie. Present vegetation: Weeds. Climate: Humid temperate. Slope: 1/2 percent to west.

Erosion: None.

Elevation: Approximately 610 feet.

Parent material: 30 to 60 inches of Peorian loess over silty clay loam Wisconsin till of Tazewell age. Sampled by: G. O. Walker and R. H. Jordan, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 16, 1957.

Horizon and Lincoln Isb. Number

O to 7 inches. Black (10YR 1/1 moist) silty clay loam; moderate very fine to fine subangular blocky; Alp 6895 firm when moist; boundary clear and smooth; roots common; drying cracks common; pH is 5.8.

7 to 13 inches. Rlack (10YR 2/1 moist) heavy silty clay loam; moderate fine to medium subangular blocky structure; firm when moist; boundary clear and smooth; pH is 6.0; roots common; drying cracks Al2 6896 common.

13 to 19 inches. Very dark gray (10YR 3/1 moist) silty clay loam; common fine faint dark grayish brown (10YR 4/2 moist) mottles; moderate medium subangular blocky; firm when moist; boundary clear and smooth; pH is 6.5; few small iron-manganese concretions; roots few; few black (10YR 2/1 moist) organic R21 6897 coatings.

B22 19 to 23 inches. Mixed dark grayish brown (2.5Y 4/2 moist) and olive gray (5Y 5/2 moist) light silty 6898 clay with few fine distinct olive (5Y 5/6 moist) mottles; weak medium prismatic structures breaking to moderate fine subangular blocky to blocky; firm when moist; boundary clear and wavy; pH is 6.5; roots few; few small iron-manganese concretions; root holes common; thin discontinuous clay skins.

**B2**3 23 to 31 inches. Olive gray (5Y 5/2 moist) silty clay loam; few fine prominent yellowish brown (10YR 6899 5/8 moist) mottles; moderate medium prismatic structure breaking to moderate fine to medium blocky; firm when moist; boundary gradual and wavy; pH is 6.5; root holes common; thin discontinuous clay skins.

31 to 37 inches. Olive gray (5Y 5/2 moist) light silty clay losm; many fine to medium prominent yellowish brown (10YR 5/6 to 5/8 moist) mottles; weak coarse blocky structure; firm when moist; boundary gradual and wavy; pH is 7.5; roots few; fine thread-like channels present. 6900

37 to 44 inches. Olive gray (5Y 5/2 moist) heavy silt loam; common medium prominent yellowish brown C 6901 (10YR 5/6 moist) mottles; massive to weak fragmental structure; friable when moist; boundary clear and smooth; pH is 8.0 plus; calcareous; fine thread-like channels present; roots few.

44 to 50 inches plus. Gray (5Y 5/1 moist) silty clay loam; many medium prominent dark yellowish brown (10YR 4/4 moist) and yellowish brown (10YR 5/6 moist) mottles; massive to weak very coarse frag-6902 mental structure; firm when moist; calcareous; few ped faces with secondary lime; many small till pebbles present.

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas are few in this profile, beginning in the B21 and extending to sampling depth (50 inches). They have black (10 TR 2/1 moist) fillings and are mostly around  $1\frac{1}{2}$  inches to 2 inches in diameter and there are about 2 to 3 per square foot in horizontal cross section.

SOIL TYPE Drummer LOCATION Livingston County, Illinois silty clay loam

SOIL NOS. <u>\$57111-53-1</u> **LAB. NOS.** 6873-6880

		1Bla	,	PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	r cent)	3A1		165024 1331 <b>0 }00\$</b> \$\$\$\$\$\$
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURA CLASS
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0, 2-0.02	002-0002	<19mm	
0-8	All	0.5a	0.4a	0.3b	0.7ь	0.7b	56.6	40.8	21.8	35.9	_	sic
8-16	Al2	0.30	0.4c	0.40	0.7ь	0.7b	58.2	39.3	21.9	37.4	Tr.	sicl
16-20	B1.	0.2c	0.5c	0.5c	0.8c	0.7b	58.6	38.7	22.1	37.6	Tr.	sicl
	B21	0.20	0.3c	0.3c	0.6c	0.66	60.7	37•3	22.5	39.1	Tr.	sicl
	B22	0.24	0.3đ	0.3đ	0.7d	0.7c	57.7	40.1	21.2	37.6	-	sic
35-41	C	0.2c	0.40	0.4c	0.60	0.60	62.5	35.3	25.9	37.5	Tr.	sicl
41-46	$\mathbf{m}$	0.3c	0.7c	0.7c	1.7c	1.6c	53.4	41.6	18.9	37.1	Tr.	sic
46 +	D2	1.2e	1.0e	1.Òe	2.4e	2.3e		40.5	16.4	38.9	Tr.	sic
19800311198908884388		64475 <b>3988</b> 24824419					nemeraturana				11111111111111111111111111111111111111	
X	PH			MIC MA	TTER	Free	ELECTRI-	6Ela		n. 2	WATER	CONTE
8Cla			6Ala	6Bla		Iron	CAL CONDUC- TIVITY	CoCO <sub>3</sub>	GYPSUM	Bulk	1 <u>f</u>	٤
	1:5	1:10	ORGANIC CARBON	NITRO→ GEN	C/N	Fe <sub>2</sub> 03%	TIVITY EC × 103 MILLIMHOS	equiv-	me./100g, SOIL	Den-	Field	
• •	1,5	••			<u>.</u>		PER CM		00.2	J-0,	State	15 <b>-B</b> ∈
!:1			2	- %		******	423°C,	%		g/cc	<b>%</b>	
5.6				0.454	13			-		^	- 0 -	25.0
6.3				0.227	12	·		-		1.18	18.5	20.6
6.8				0.106	12			-				17.4
7.0				0.067	11			-		1.46	13.6	17.0
7.2			0.61			i		-	•		\	18.0
7.5			0.51					<u> </u>		1.49	24.2	17.0
7.7			0.44					3		- /-		18.0
7.8			0.40					19		1.60	23.1	18.0
5Äla	10401-07-1-07-17010	EXTRAC	TABLE	CATIONS	531a	561	5 <b>C</b> 3	5Bla		8 <b>D</b> 3	************	1994 <b>9</b> #2# <b>9##</b> ##
	*******				# * <b>#</b> *****	:			, ,-~-			
CATION	6N2b	602b	6Hla	6P2a	6Q2a	Base	Base	Sum	Sum			MOISTUR
EXCHANGE						Sat.%	Base Sat.%	Sum Ext.	Sum Ext.	Ca/Mg		MOISTUR AT SATU-
EXCHANGE CAPACITY		Mg	н	Na	к	Sat.% NH <sub>ll</sub> Ac	Base Sat.% on Sum	Sum Ext. Beses	Sum Ext. Cations			MOISTUR AT SATU- RATION
		Mg		Na	к	Sat.% NH <sub>ll</sub> Ac	Base Sat.%	Sum Ext. Beses me/:	Sum Ext. Cations OOg			SATU-
EXCHANGE CAPACITY	Ca	Mg	н	Na	к	Sat.% NH <sub>ll</sub> Ac	Base Sat.% on Sum	Sum Ext. Beses me/:	Sum Ext. Cations OOg 47.7	Ca/Mg 3.2		SATU- RATION
NH <sub>4</sub> Ac:	<b>c.</b> 25 <b>.</b> 8	Mg millequiv	H olents per	Na 100g. sol	к	Sat.% NH <sub>U</sub> Ac	Base Sat.% on Sum Cations	Sum Ext. Beses me/: 34.7 34.1	Sum Ext. Cations OOg 47.7 41.2	Ca/Mg		SATU- RATION
NH <sub>L</sub> AC: 41.5 36.9	Ca	Mg millequiv	H clems per 13.0	Na 100g. sol	<b>κ</b> → 0.9	Set.% NH <sub>11</sub> Ac 84	Base Sat.% on Sum Cations 73 83 89	Sum Ext. Beses me/: 34.7	Sum Ext. Cations OOg 47.7	Ca/Mg 3.2		SATU- RATION
NH <sub>4</sub> Ac:	<b>c.</b> 25.8 24.3	Mg milliequiv 8.0 9.3	H clemts per 13.0 7.1	Na 100g. soi -	0.9 0.5	Set.% NH <sub>11</sub> Ac 84	Base Sat.% on Sum Cations 73 83	Sum Ext. Bases me/: 34.7 34.1 30.8 27.2	Sum Ext. Cations OOg 47.7 41.2	Ca/Mg 3.2		SATU- RATION
41.5 36.9 30.7 26.6	25.8 24.3 20.8	Mg milliequiv 8.0 9.3 9.4	13.0 7.1 3.8	No 100g. soi - - 0.1	0.9 0.5 0.5	Set.% NH <sub>11</sub> Ac 84	Base Sat. % on Sum Cations 73 83 89 89	Sum Ext. Bases me/: 34.7 34.1 30.8 27.2 30.4	Sum Ext. Oog 47.7 41.2 34.6 30.5 32.1	Ca/Mg 3.2		SATU- RATION
NH <sub>14</sub> Ac: 41.5 36.9 30.7	25.8 24.3 20.8 17.9	Mg milliequiv 8.0 9.3 9.4 8.7	13.0 7.1 3.8 3.3	Na 100g. soi - 0.1 0.1 0.1 0.1	0.9 0.5 0.5 0.5 0.5 0.4	Set.% NH <sub>11</sub> Ac 84	Base Sat.% on Sum Cations 73 83 89 89	Sum Ext. Bases me/: 34.7 34.1 30.8 27.2 30.4	Sum Ext. Cations 00g 47.7 41.2 34.6 30.5	Ca/Mg 3.2		SATU- RATION
20.7 26.6 30.2	25.8 24.3 20.8 17.9 19.6	Mg 8.0 9.3 9.4 8.7 10.2	13.0 7.1 3.8 3.3 1.7	No 100g. soil 0.1 0.1 0.1	0.9 0.5 0.5 0.5 0.5	Set.% NH <sub>11</sub> Ac 84	Base Sat. % on Sum Cations 73 83 89 89	Sum Ext. Bases me/: 34.7 34.1 30.8 27.2 30.4	Sum Ext. Oog 47.7 41.2 34.6 30.5 32.1	Ca/Mg 3.2		SATU- RATION
H1.5 36.9 30.7 26.6 30.2 24.8	25.8 24.3 20.8 17.9 19.6 16.9	8.0 9.3 9.4 8.7 10.2 8.9	13.0 7.1 3.8 3.3 1.7	No 100g. soi - - 0.1 0.1 0.1 0.1 0.1	0.9 0.5 0.5 0.5 0.4 0.4	Set.% NH <sub>11</sub> Ac 84	Base Sat. % on Sum Cations 73 83 89 89	Sum Ext. Bases me/: 34.7 34.1 30.8 27.2 30.4	Sum Ext. Oog 47.7 41.2 34.6 30.5 32.1	Ca/Mg 3.2		SATU- RATION
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Soil type: Drummer silty clay loam

Soil Nos. : 857Ill-53-1
Location: Livingston County, Illinois; 858 feet west of black top road in second low area from corner of Section

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on north side of dirt road in roadside sod of Andropogan furcatus (Big Bluestem), SE160, SE40, SW10 of

Section 21, T27N, R3E. Classification: Ramic Gley.

Natural drainage: Poor.

Native vegetation: Wet prairie. Present vegetation: Mig Mluestem.

Climate: Humid temperate. Slope: 1 percent to west.

Erosion: None.

Parent material: 30 to 60 inches of Peorian loess over silty clay loem Wisconsin till of Tazewell age.

Sampled by: J. E. Paschke, D. C. Hallbick, N. E. Barnes, and G. O. Walker, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 14, 1957.

Horizon and Idneoln. Tab. Number

0 to 8 inches. Black (10YR 1/1 moist) silty clay loam; moderate to strong fine subangular blocky 6873 breaking to moderate fine granular structure; firm when moist; boundary diffuse and smooth; pH is 6.0; big bluestem roots are abundant.

A12 8 to 16 inches. Hack (10YR 1/1 moist) heavy silty clay loam; moderate medium to coarse subangular 6874 blocky structure; firm when moist; boundary diffuse and smooth; pH is 6.5; abundant big bluestem roots.

16 to 20 inches. Black (10YR 2/1 moist) silty clay; moderate medium subangular blocky structure breaking 6875 to strong fine subangular blocky structure; firm when moist; boundary to horizon below is gradual and smooth; pH is 7.0; few small iron-manganese concretions; thin continuous clay skins on vertical and horizontal surfaces; one small chert and one small shale fragment found.

20 to 26 inches. Yellowish brown (10YR 5/6 moist) silty clay; mottles are many fine to medium distinct dark grayish brown (2.5Y 4/2 moist) to olive brown (2.5Y 4/4 moist); moderate fine to medium sub-6876 angular blocky structure; firm when moist; boundary gradual and smooth; pH is 7.5; few small iron-manganese concretions; thin continuous dark gray (N 4/ moist) organic and clay skins.

26 to 35 inches. Mixed yellowish brown (10YR 5/8 moist) and grayish brown (2.5Y 5/2 moist) silty clay loam; weak medium to coarse prismatic structure breaking to weak medium blocky; firm when moist; boundary 6877 clear and wavy; pH is 8.0; thin discontinuous dark grayish brown (2.5Y 4/2 moist) organic and clay skins; root channels continuous through peds.

c 6878 35 to 41 inches. Mixed dark gray (2.5Y 4/1 moist) and light olive brown (2.5Y 5/8 moist) light silty clay loam grading to silt loam in lower part; weak coarse prismatic to massive; firm when moist; boundary is clear and smooth; pH is 8.0; root channels common; krotovinas filled with very dark gray (2.5Y 3/1 moist) silty clay loam.

41 to 46 inches. Dark yellowish brown (10YR 4/4 moist) silty clay loam; mottles are many medium distinct yellowish brown (10YR 5/8 moist) and gray (N 5/ moist); massive; firm when moist; boundary clear and wavy; weakly calcareous; pH is 8.0 plus; few root channels; very dark gray (N 3/ moist) krotovina m 6879 fillings.

46 inches plus. Yellowish brown (10YR 5/4 moist) silty clay losm mottled with many fine to medium faint to distinct gray (10YR 5/0 moist) and yellowish brown (10YR 5/8 moist); massive; very firm when TPP 6880 moist; calcareous; some krotovinas go deeper--others end in this depth.

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas are extensive throughout the profile; they extend vertically and range from 1 inch to 22 inches in diameter; in the lower B and C horizon there are about 6 per square foot on a horizontal section.

SOIL SURVEY LABORATORY Lincoln, Nebr. September 1958

SOIL NOS. S57II1-99-1 LAB. NOS. 6903-6909

1	i		lBla		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	or cent)	3Al		***************************************
DEPT	. 1		VERY				VERY					2A2	
INCHE	S	HORIZON		COARSE SAND	MEDIUM SAND	FINE SAND	FINE	SILT	CLAY			<b>&gt;</b> 2	TEXTURAL CLASS
L			2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	<19mm	
0-6	į	Alp [	0.3a	0.5a	0.ба	1.5a	1.4a	59.9	35.8	24.0	38.1	Tr.	sicl
6-9		Alē	0.4a	0.5a	0.6a	1.4a	1.5a	60.3	35.3	24.1	38.5	Tr.	sicl
9-16	6	B1	0.la	0.3a	0.4a	1.2a	1.7a	60.2	36.1	25.3	37.3	Tr.	sicl
16-20		B21	0.2a	0.3a	0.3a	0.9a	1.0a	61.5	35.8	23.8	39.2	Tr.	sicl

Soil type: Drummer silty clay loam

Soil Not.: \$57111-99-1 Location: Will County, Illinois; 58 feet south of center of dirt road and 7 feet east of quarter line, NW160, NW10 of Section 15, T37N, RGE.

Classification: Humic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Alfalfa and Climate: Humid temperate. Slope: 1/2 percent to west.

Erosion: None.

Parent material: Very thin Feorian losss cover on loam textured Wisconsin till of Cary age.

Sampled by: N. E. Barnes, G. O. Walker, and R. H. Jordan, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 17, 1957.

Horizon and Lincoln Lab. Number

0 to 6 inches. Black (10YR 1/1 moist) light silty clay loam; weak fine granular structure; friable 6903 when moist; boundary abrupt and clear; pH is 8.0; roots common.

6 to 9 inches. Black (10YR 1/1 moist) silty clay loam; moderate medium blocky structure; firm when moist; boundary abrupt and clear; pH is 8.0; this is a plow sole with roots common and few small pebbles. A12 6904

9 to 16 inches. Very dark brown (10YR 2/1.5 moist) silty clay loam; weak fine subangular blocky structure; firm when moist; boundary diffuse and smooth; pH is 8.0; some black (10YR 2/1 moist) vertical Вī 6905 streaks: roots common: few small pebbles.

16 to 20 inches. Black (2.5Y 2/1 moist) silty clay loam; moderate fine subangular blocky structure; firm when moist; boundary clear and smooth; pH is 8.0; few roots; few fine iron-manganese concretions; RPI 6906 few small nebbles.

20 to 25 inches. Gray to dark gray (2.5Y 4.5/1 moist) silty clay loam with many fine prominent yellowish brown (10YR 5/6 to 5/4 moist) mottles; strong fine prismatic structure breaking to strong **FO2** 6907 fine blocky; firm when moist; boundary clear and smooth; roots few; few thin black (10YR 2/1 moist)

organic coatings; few worm casts. 25 to 34 inches. Gray (57 5/1 moist) light silty clay loam with common medium prominent yellowish brown (10YR 5/4 to 5/6 moist) mottles; strong fine prismatic structure with evenly formed 5- and 6-B23 6908

sided prisms; firm when moist; boundary clear and wavy; pH is 8.0; roots few; prisms also are formed in the krotovinas of this horizon; black (10YR 2/1 moist) organic coatings still continue; krotovina color of very dark gray (2.5Y 3.5/1 moist) with few fine faint yellowish brown (10YR 5/4 moist) and light olive brown (2.5Y 5/4 moist) mottles.

34 to 50 inches plus. Mixed gray to light gray (2.5Y 6/1 moist) and yellowish brown (10YR 5/6 moist) heavy losm; massive; firm when moist; calcareous; very few roots; numerous pebbles. 6909

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. pH in upper part of profile is higher than normal for the type. Krotovinas start in the B21 and extend into the loam till to a depth of 44 to 46 inches; they are mostly the striking things about this profile is the strong development of prismatic structure in the subsoil.

SOIL Elliott silt loam

SOIL Nos. S48II1-99-1 LOCATION Will County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

\_\_LAB. Nos. 481135 - 481139

		T1816						Cive at-	s and noth	cla diemete	hr (mm) 9=	<del>.</del>						
		1818	Total		Τ			Size clas	s and parti	cle diamete Sil		<u> </u>		Γ	382	Cna	rse fragme	ots 381
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Depth	Horizon	Sand	Silt	Clay	Very coarse	Coarse	Medium	Fine	Very fine		Int. 🎞	Int. 🗓		l		<b>&gt;=</b> 2	2 - 19	19-7
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		-	47.9	20.0	1.6	1.7	2.7	11.2	6.1		37.0	24.0				2		
				-		- <b></b>												
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_												tr. = tra	<b>CB</b> , x = SM	if, xx = mi	oderate, xxx	. == abunda	m1, xxxx ==	domina
												îr. = îra	¢#, x = \$m	alf, xx = mi	oderate, xxx	l == abunda	nt, xxxx ==	domini
												îr. ≔ îr≢	CA, x = SM	alf, xx = mi	oderate, xxx	a abunda	п1, хуху ==	domini

111 Soil Type: Elliott silt loam Soil No.: S48Ill-99-1
Location: Will County, Illinois. SE160 SW40 SE10 Sec. 24 T.33N R.12E; 300 feet west of four lane highway in Wilmington black top road. \_Slome: 2 percent.\_\_ Horizon and Beltsville Lab. No. O to 12 inches. Very dark gray (10YR 3/1) moist, friable, granular silt loam containing 481135 numerous fibrous roots. 12 to 18 inches. Blends into dark grayish brown (10YR 4/2) moist, friable, granular silt loam A3 481136 with numerous roots. 18 to 24 inches. Blends into mottled strong brown and brown (7.5YB 5/6 - 5/2) moist. silty 5/4) moist, color. Darker streaks of organic matter are frequently found on the cleavage faces. 24 to 30 inches. Blends into strongly mottled dark gray and yellowish brown (10YR 4/1 and 5/4)

	SOIL SURV	YEY LABORAT	ORY Lincoln, Ne	br. October	1961
	SOIL TYPE	Ellison silt loam	LOCATION	Boone County,	Tlinois
	SOIL NOS.		•	NOS. 14079-140	
		1Bla PARTIC VERY COARSE COARSE MEDIUM	LE SIZE DISTRIBUTION	in mm.) (per cent) 3A1.	2A2 TEXTURAL CLASS
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Soil type: Ellison silt loam

: S60Ill-4-1 Soil Nos.

Location: 402 feet north and 27 feet east of the southwest corner of the NEI/4 of Section 26, T44N, R4E, Boone

County, Illinois.
Vegetation: Mixed alfalfa and clover.

Parent material: Loamy and sandy outwash material over calcareous sand.

Slope: 1 percent north to northeast.

Physiography: Outwash plain.

Drainage: Well drained.

Collected by: F. J. Carlisle, J. D. Dixon, L. J. Bushue, and B. W. Ray, September 23, 1960. Described by: B. W. Ray.

Horizon and Lincoln Lab. Number

0 to 7 inches. Very dark grayish brown (10YR 3/2) (10YR 5/2 dry) gritty silt loam, approaching loam; Ap 14079

massive; friable; abrupt smooth boundary.

7 to 11 inches. Dark brown (10YR 4/3) (10YR 5/3 dry) loam; massive; friable; contains a few tubular channels, including some worm casts, which average 3 to 5 mm. in diameter and contain very dark grayish brown (10YR 3/2) material; clear smooth boundary. 14080

11 to 16 inches. Dark brown (7.5YR 4/4) (7.5YR 5/4 dry) clay loam; weak medium subangular blocky structure; firm; when dry a few patches of blancheu silt and sand are evident on ped surfaces; few discontinuous dark brown (7.5YR 3/2) clay films; clear smooth boundary. B3 14081

16 to 24 inches. Dark brown (7.5YR 4/4) (7.5YR 4/4 dry) sandy clay loam, approaching clay loam; weak medium subangular blocky structure; firm; numerous thin dark reddish brown (5YR 3/4) clay films; clear R2 14082

smooth boundary.

The bear 17 cvo hill 17 cvo cit and see \_\_\_ \_\_ \_\_ \_\_ \_\_\_

SOIL SURVEY LABORATORY Lincoln, Nebr. October 1961 SOIL TYPE Milison LOCATION Mellenry County, Tilinois

silt loam

SOIL NOS. S60111-56-1 LAB. NOS. 14086-14094

**************	***************************************	1Bla	*****************	PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (р€	r cent)	3A1	######################################	9   5   6   <del>10   5   5   5   5   5   5   5   5   5   </del>
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAL CLASS
		2-1	1-0.5		0, 25-Q, 10		0.05-0.002	< 0.002	0.2-0.02	Q02-Q002		
0-8	Αp	0.6	5.1	14.3	17.3	2.9	45.9	13.9	31.3	23.5	-	L
8-11	B1.	1.0	4.9	9.5	12.7	2.4	42.2	27.3	25.8	23.4	Tr.	c1/1
11-19	B21	2.4	9.9	18.0	22.1	3.6	18.7	25.3	19.5	10.8		scl
19-27	B22	2.4	10.9	23.9	38.6	5.9	5.i	13.2	23.1	2.6		fel
27-33	B31.	1.0	8.4	25.0	48.0	9.3	2.5	5.8	29.9	0.9	Tr.	В
33-52	B32	0.6	6.1	23.4	54.5		2.7	2.7	32.5	1.5	Tr.	<b>P</b> s
33-52	B23	0.4	6.2	24.7	49.6		2.3	8.7	27.7	1.2	Tr.	ls/lfs
52-67	Cl& B		5.8	22.4	55.8		1.0	2.6	35.7	0.6	1	<b>T</b> 8
67-73+		1.8a	7.48	26.9a	53.5	6.9	2.2	1.3	27.2	1.0	5	rs.
	рΗ			ANIC MA		6¢la	BUL				TURE TE	
8¢la			6Ala	6Bla	Ī	Free	4Ala	4Alc	4Alh	4B4	4B3	4B2
	1:5		ORGANIC CARBON		C/N	Iron	Field- State	30-Can	0.D.	Field-	30-0m.	15 ATMOS.
1:1			%	%		% Fe2O3	g/cc	g/cc	g/cc	State	*	- 75
515			0.55	0.062	9	1.0	8/00	8/ 55		: <u>-</u>	3	E 0
4.8			0.28	0.038		1.7		į		1		5.0 9.7
4.7			0.16	0.022		1.8	1.76	1.63	1.75	7.2	17.8	9.4
4.8	İ		0.07	0.012		1.1	1.83	1.75	1.82	3.9	13.5	5.3
5.0			0.05		l	0.7						2.4
5.5	•		0.04	İ	1	0.6	ì		1	1	İ	1.5
5.5	1		0.06			0.7		ĺ	Į			3.6
6.0			0.02	į	1	0.4		Ī	İ	1	Ī	0.9
7.7			0.02			0.3		ļ				0.8
5Ala			TABLE		5Bla	BASE	5c3	5Bla	5A3a	8D3	6Ela	201111111111111111111111111111111111111
CATION	6N2b	602b	6н1а	6P2a	602a	SAT.	Base	Sum	Sum		Carco <sup>2</sup>	
EXCHANGE CAPACITY	Co ·	Al-	н	Na	K	NH <sub>1</sub> OAc	Set. %	Ext.	Ext.	Ca/Mg	Equi <b>v</b> -	ł
NHLOAC		, my	•	1	j	EXCH.	on Sum	Beses	Cat-		alent	
<u> </u>	<del>!</del>	viupoi!ia	ratents per	100g. soi	·	<u> 5</u> ู่ <u> 5</u> ู่	Cations	l	lions	J	1 %	<b>∤</b> ,

Soil type: Ellison silt loam

Soil Nos. : 960111-56-1

Location: 54 yards east and 92 yards south of the northwest corner, Section 6, T44N, R6E, McHenry County, Illinois.

Vegetation and land use: Corn stubble; cultivated field.

Slope and land form: Slope gradient is 1 percent. Site is on the crest of a broad elongated knoll in gently rolling glacial outwash topography; the nearly level crest of the knoll is about 100 yards wide in a

north-south direction and about 200 yards long east-west.

Drainage: Well drained.

Parent materials: Stratified glacial outwash materials.
Sampled and described by: F. J. Carlisle, J. D. Dixon, and L. J. Bushue, September 24, 1960.

Horizon and Lincoln Lab. Number

B22 14089 A to 8 typhes. Dark groundsh homen (10YR 4/2) (10YR 5/2 to 6/2 day) grittur siit. losm: massive: frishle:

constituent; pH 5.5; abrupt smooth boundary.

8 to 11 inches. Dark yellowish brown (10YR 4/4, 5/4 dry) gritty medium silty clay loam; weak fine and very fine subangular blocky structure; slightly firm; few patches, 1-to 2-mm. across, of blanched silt and fine sand on peds; clay films not evident; pH 5.3; clear smooth boundary. 14087

11 to 19 inches. Brown (7.5YR 4/2 to 4/3) (7.5YR 5/4 dry) gritty medium silty clay loam approaching clay 14088 loam; moderate fine subangular blocky structure; firm; patches of clay film 2 to 5-mm. across are evident on ped surfaces; pH 5.2; gradual smooth boundary.

19 to 27 inches. Dark brown (7.5YR 4/4) (7.5YR 4/4 dry) medium clay loam; (the value of the color of the dry soil appears to be slightly higher than that of the moist soil but the difference is not readable); weak medium subangular blocky structure; firm; patches of brown clay films on ped surfaces; few thin, 1 to 3 mm. in width, coatings of black oxides on some ped faces and gravel fragments; pH 5.2; clear smooth boundary.

27 to 33 inches. Dark brown (7.5YR 4/4) (7.5YR 4/4 to 5/4 dry) loamy sand; massive; friable; very thin B31. 14090 brown clay films are nearly continuous on sand grains; pH 5.6; clear slightly wavy boundary.

B32 33 to 52 inches. This layer consists of loamy sand B32 material that contains narrow bands of sandy loam which are designated R23. The two components were sampled separately for laboratory analyses. 14091 proportion of each component varies from 40 to 60 percent in different parts of the profile. Most of and the B23 material occurs in horizontal bands 1/2 to 1-1/2 inches thick. The bands thicken to a maximum of 4 inches in a few places where the B23 is dominant in the layer. A coarse network of irregular bands **B2**3 14092 about 1/4-inch thick connects the thicker horizontal bands in the lower part of the layer. Properties of the two components are as follows:

B32 Yellowish brown (10YR 5/4) (7.5YR 5/4 dry) loamy sand that is slightly less clayey than the B31 horizon; slightly coherent sand grains lack visible coatings; very friable; pH 5.6.

SOIL Fayette silt loam SOIL Nos. 12ª LOCATION Carroll County, Illinois SOIL SURVEY LABORATORY \_\_\_Beltsville, Maryland \_ LAB. Nos. \_\_ D3510 - D3532

		1816						Size clas	s and parti	cle diamete	r (mm) 3A	1			4			
			Total					Şand	o ana para	Sil		i ¬	_		6A3a —	Coa	rse fragme	ents 3f
ł			T	Ι	,	1		ſ	1	ı i		1 1			rganic	2A2	- VENK	T
Depth	Horizon	Sand	Şilt	Clay	Very coarse	Coarse	Medium	Fine	Very fine	1	int. III	Int. II			atter	<b>&gt;-</b> 2	2 - 19	19-
(ln.)		(2-0.05)	(0.05-	( < 0.002)	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0.1-0.05)	0.050.02	(0.02- 0.002)	(0.2-0.02)	(2-0.1)	B	202	1		l ct. of
l l			1 0.002,	1	١	<u>,</u>	t. of <del>-&lt;</del> 2 :	mm	<u>'</u>		U.002)	·l		l	Pct.	Pct.		76 <b>m</b> m
0-2		T	76.8	13.3	0.2	0,6	0.6	1.2	7.3		36.8	48.0		1	5.0	tr.	†	T
2-4			78.3	12.0	0.3	0.7	0.5	0.9	7.3		37.4	48.8			3.0	tr.		
4-8		1	79.3	11.4	0.1	0.5	0.4	0.7	7.6		37.9	49.5			1.1	tr.		
8-12		† ·	76.1	14.0	0.1	0.4	0,4	0.8	8.2			49.5			5.6		+ -	+-
					1						35.3				0.3	-		
12-15			74.5	16.7	-	0.3	0.4	0.8	7-3		33.0	49.2			0.3 0.4	-	}	
15-19		<del> </del>	71.1	20.1	-	0.3	0.3	0.7	7.5	-	31.9	47.2				-		<del> </del>
19-22		İ	65.7	26.9	-	0.1	0.1	0.4	6.8		29.7	43.0			0.3	-		
22-25		1	62.8	30.1	-	0.1	0.1	0.4	6.5	i	27.1	42.1			0.3	-		1
25-28		<b>├</b>	62.0	31.5	-	0.1	0.1	0.4	5.9		27.5	40.7			0.2	ļ. <u>-</u>	1	<u> </u>
28-31			62.5	30.5	_	0.1	0.1	0.4	6.4		28.3	40.8		· '	0.2	-		
31-33 35-38		ľ	63.4 64.4	29.4 20.1 28.3	-	0.1	0:1 0:2 0:1	8: <u>5</u>	6.5 6.5		27.8 28.7 28.7	12:3			0.2 0.2 0.3	-		
32-38		}	23.1	59.4	=	8.3	18.4	0.4	12.5		20.5	42.5		· '	0.3	=	ł	1
38-41		1	65.3	28.6	_	0.1	0.1	0.4	5.5		30.0	41.0			0.2			1
41-45 <del>5</del>		1	67.5	27.2	_	0.1	0.2	0.4	4.6			41.7		1	0.2	-	Į	1
					<u> </u>						30.6			+	0.2	ļ =	₩	$\vdash$
45-4-49			68.6	25.9	-	0.2	0.3	0.5	4.5		31.4	42.1				-		1
492-54		1	70.2	24.7	-	0.1	0.3	0.4	4.3		32.3	42.4		1	0.2	. <del>-</del>	1	1
54-58		<del> </del>	69.4	25.8		0,1	0.3	0.5	3.9	L	33.8	39.8		—	0,1	tr.	Ь—	+
58-64		1	70.3	23.4	-	0.2	0.3	0.7	5.1		31.1	44.7		1	0.1	-	}	1
64-72		!	74.7	18.9	-	0.2	0.5	1.3	4.4		35.1	44.8		1	0.1	tr.	1	1
72-81			76.7	18.6		0.2	0.7	1.1	2.7		40.0	39.9		Ь	0.1	tr.		L
81-87			73.0	16.8	0,2	1.5	2.2	2.8	3.5		41.3	36.6			0.2	tr.	ŀ	1
87-99			63.2	13.1	0.9	3.9	5.9	7.9	5.1		35.4	36.7		ļ	0.1	1 1	l	
		Evtractal	ole bases 5	6B1a		6m-	C	C	6G1d			•	ρH		803		Base set	huzation
-		EXCIDENT	ne uases .	1		бна	, °'	LG	0614				, pn	r	1 ""			T
Depth	6N2d	602b	6P2a	6Q2a		Ext.							8Clc	8Cla			5C3	501
(In.)	۸-	l	Na	к			5A3a		Ext.				4.5		Ca/Mg			1
	Ca	Mg	i Na	, n	Sum	acidity	Sum		Al				(1:1)	(1:1)			Şum	NH <sub>4</sub> 0
1		Į.	Į.	1		!	cations	}	,	1			КСІ	H <sub>2</sub> 0	ł	ì	cations	1
	<del></del>				meq/100 g							<b>-</b>		L	<b></b>	<b>—</b>	Pct.	Pct.
0-5	2.9	1.9				10.6							1	5.0		1	31	1
2-4	1.1	0.9	l			10.0	l						ŀ	4-7	1	1	17	1
4-8	0.9	tr.		ļ		7,1						L	<u> </u>	4.6	L		11	ļ
8-12	0.9	0.4				6.6				]				4.6			17	I -
12-15	1.2	1.3				7.4							l	4.5	1	1	25	1
15-19	2,2	2.3		L		8.2	L					L	<u> </u>	4.5			35 46	Ь.
19-22	4.4	3.5			-	9.2								4.6				
22-25	6.2	4.0	I	:		9.7							l	4.6			51	1
25-28	7.4	4.5	i	1 1		9.1	i '	Ì	ì '				1	4.7	1	]	57	1
25-28 28-31	8.1	4.5	1	Ţ ·		9.1 8.7	T						<b>—</b>	4.7			59	
31-33	8.5	4.5				7.6	1		ļ					4.8		1	59 63 66	ľ
31-33 33 <b>-</b> 35	8.5 8.8	4.5 4.5			L	7.6 7.0	L.					L	<u> </u>	4.8	1		66	L_
35-38 38-41	9.0	4.7	T	[		6.5	Γ							4.9			68	
28-11	9.5	4.7	!			6.5				.		ļ	ļ	5.0			69	1
			i	1		5.5	1					i	l.	5.1		I	72	1
																		_
41-45	9.6	4.7												5.2			176	1
41-45 <del>5</del> 45 <del>3</del> -49 <del>3</del>	9.6 9.8	4.7				4.7								5.2			76 78	
41-45 <del>5</del> 45 <del>3</del> -49 <del>5</del> 493-54	9.6 9.8 9.8	4.7 4.8 5.0				4.7 4.1								5.2			78	
41-45 <del>5</del> 45 <del>3</del> -49 <del>5</del> 493-54	9.6 9.8 9.8 10.3	4.7 4.8 5.0				4.7 4.1 3.9								5.2 5.3			78 80	
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41-45 <del>5</del> 45 <del>5</del> -49 <del>5</del> 49 <del>5</del> -54 54-58 58-64 64-72	9.6 9.8 9.8 10.3 9.9 8.1	4.7 4.8 5.0 5.1 5.1 4.2				4.7 4.1 3.9 3.6 2.8								5.2 5.4 5.6			78 80 81 82	
41-455 453-495 495-54 54-58 58-64 64-72 72-81	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3				4.7 4.1 3.9 3.6 2.8 3.0								5.2 5.4 5.6 5.7			78 80 81 82 81	
41-45\$ 45\$-49\$ 49\$-54 54-58 58-64 64-72 72-81 81-87	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8				4.7 4.1 3.6 2.8 3.0 2.9								5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-455 453-495 495-54 54-58 58-64 64-72 72-81	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3				4.7 4.1 3.9 3.6 2.8 3.0								5.2 5.4 5.6 5.7			78 80 81 82 81	
41-45\$ 45\$-49\$ 49\$-54 54-58 58-64 64-72 72-81 81-87	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8				4.7 4.1 3.6 2.8 3.0 2.9								5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-45\$ 45\$-49\$ 49\$-54 54-58 58-64 64-72 72-81 81-87	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8		Clay Fract	ion Analysi	4.7 4.1 3.9 3.6 2.8 3.0 2.9 2.3								5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-45-4 45-4-49-2 49-5-4 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	No.	Τ		4.7 4.1 3.6 2.8 3.0 2.9 2.3	<b>K</b>	Cibbride						5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8	Vm.	Clay Fract	ion Analysi Int.	4.7 4.1 3.9 3.6 2.8 3.0 2.9 2.3	Ki.	Gibbsite						5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-45- 45-49-2 49-54-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	Vm.	Τ		4.7 4.1 3.6 2.8 3.0 2.9 2.3	K1.	Gibbsite						5.2 5.4 5.6 5.7 5.8			78 80 81 82 81 79	
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	Vm.	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3	Ki.	Gibbsite						5.2 5.4 5.6 5.7 5.8 6.0			78 80 81 82 81 79 78	
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	l 	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3		Gibbsite						5.2 5.4 5.6 5.7 5.8 6.0	= chlorite, V		78 80 81 82 81 79 78	= mica
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	7A2	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3								5.2 5.4 5.6 5.7 5.8 6.0	= chlorite, V		78 80 81 82 81 79 78	= mica
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	7A2	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3						int. = Ir	nterstratifie	5.2 5.4 5.6 5.7 5.8 6.0	tz. ≕ guartz,	KI. = Kao	78 80 81 82 81 79 78	
41-455 453-492 492-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	7A2	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3						int. = in Relative	nterstratifie amounts:	5.2 5.4 5.6 5.7 5.8 6.0	tz. = guartz, ot determine	KI. = Kao ed, dash =	78 80 81 82 81 79 78	ed,
41-455 453-495 495-54 54-58 58-64 64-72 72-81 81-87 87-99	9.6 9.8 9.8 10.3 9.9 8.1 8.3 7.4 5.5	4.7 4.8 5.0 5.1 5.1 4.2 4.3 3.8 2.6	7A2	Mi.		4.7 4.1 3.6 2.8 3.0 2.9 2.3						int. = in Relative	nterstratifie amounts:	5.2 5.4 5.6 5.7 5.8 6.0	tz. ≕ guartz,	KI. = Kao ed, dash =	78 80 81 82 81 79 78	ed,

Soil Type: Fayette silt loam

Soil No.: 128

Location: Carroll County, Illinois. SE 1/4 of SW 1/4 of Sec. 17, T 23 N, R 7 E.

Sampled by and date: H. Wascher, E. P. Whiteside, and R. J. Muckenhirn. September 26, 1944.

Horizon and Beltsville Lab. No.

Not Sampled 1/2 to 0 inches. Mat of partially decomposed leaves, acorns, and twigs.

D3510 0 to 2 inches. Grayish brown silt loam, fine granular structure; organic matter; many fine roots.

2 to 4 inches. Light brownish gray to pale brown silt loam; very fine platy in place, breaking to fine D3511 to very fine soft granular structure; roots abundant.

4 to 8 inches. Light yellowish brown silt loam; thin platy structure, breaking to flattened fine granules; friable; moderately vestcular and sprinkled with silica flour; rodent burrows, wormholes, and casts present; abundant hair-like roots.

8 to 12 inches. Yellowish brown silt loam; fine to medium granular structure; medium platy structure
D3513 in place but irregularly present; slight sprinklings of silica flour; filled rodent burrow and some
worm casts present; roots fairly abundant.

worm casts present; roots fairly abundant.

12 to 15 inches. Yellowish brown silt losm; medium blocky structure; sprinklings of silica flour on D3514 exterior of slightly vesicular aggregates; little worm activity; few roots.

15 to 19 inches. Light yellowish brown silt losm; medium blocky structure; aggregates irregular, somematerial production of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of the product of

19 to 22 inches. Yellowish brown silty clay loam; medium blocky structure; sharply angular; moderately D3516 hard; thinly sprinkled with silica flour; and slightly vesicular; fine roots few but partly decomposed roots up to one-half inch in dismeter, present; few worms.

22 to 25 inches. Dark yellowish brown silty clay; aggregates coated with moderate brown and are D3517 abundantly sprinkled with silica flour; roots not abundant.

25 to 28 inches. Dark yellowish brown silty clay; medium blocky structure; firm; coated with silica D3518 flour and specked with small dark brown spots; roots up to one-half inch in diameter present.

28 to 31 inches. Similar to above layer, silica coating seems more abundant; roots have followed the prominent crevices.

31 to 33 inches. Dark yellowish brown silty clay loam; medium blocky structure. Aggregates are D3520 coated with silica, some show thick coatings.

D3521 33 to 35 inches. Same as above layer.

35 to 38 inches. Dark yellowish brown silty clay loam; coarse blocky structure. Aggregates coated D3522 with silica four; dark orange mottlings present; roots few.

38 to 41 inches. Yellowish brown silty clay losm; medium to coarse blocky structure; dark orange D3523 mottlings and silics flour evident along old root channels, fine hair-like roots present.

D3524 41 to 45 1/2 inches. Similar to above; aggregates tend to be larger, slightly vesicular and firm.

45 1/2 to 49 1/2 inches. Yellowish brown silty clay loam; coarse blocky structure; Aggregates spotted D3525 and specked with dark brown; few roots.

49 1/2 to 54 inches. Yellowish brown silt loam; weakly coarse blocky structure; orange and gray mottling present near root channels.

D3527 54 to 58 inches. Light to strong yellowish brown silt loam; coarse, weak blocky structure.

58 to 64 inches. Light to moderate yellowish brown silt loam; weak medium to coarse blocky structure; b3528 specked with brown and orange on interiors; slightly vesicular.

D3529 64 to 72 inches. Light yellowish brown silt loam. Similar to above but more silty.

D3530 72 to 81 inches. Same as 64-72.

D3531 81 to 87 inches. Yellowish brown silt loam. A flint particle one-fourth inch in diameter was found.

D3532 87 to 99 inches. Similar to above but containing more pebbles.

Notes: a Part of Project Z-1-2-8.

Depth (in)

Chi

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KI

Gibbsrte

\_\_\_\_\_ SOIL Nos. \_\_\_\_148 SOIL Fayette silt loam

LOCATION \_ Carroll County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

\_\_ LAB. Nos. \_\_ D3552 -\_ D3573

		1B1b	Total		ı			Sand	s and parti	cle diamete Si		, 		_	6A1a	Coar	se fragme	ints 381
		-	ı —	1		l .	1 7		1	3,1	İ				Organic	2A2	sa makina	
Depth	Honzon	Sand	Sin	Clay	Very	Course	Mødium	Fine	Very fine		Int III	Int. 🎞			matter	<b>3-</b> 2	2 - 19	19-7
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16-19			67.5	24.5	-	0.1	0.1	0.4	7.4		29.3	45.8			0.4	[		
19-22			64.4	27.6	_	0.1	0.1	0.3	7.5		27.5	44.7			0.3 0.3	l -		
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25-28			59.6	29.4 28.6	-	0.3	0.3	8.0	9.6		23.8	45.9			0.2			
28-31			60.5	28.6	-	0.1	0.1	0.6	10.1		24.0	46.9			0.2	-		
31-33			63.1	27.9	-	-	0.1	0.2	8.7		24.8	47.1			0.4	-		
33-36			62.9	28.1	-	-	-	0.3	8.7		24.7	47.0		l	0.4	-		
36-39		Ĩ	63.4	27.1	-		-	0.3	9.2		24.7	48.1		T	0.3			
39-42			62.3	28.1	-	-	-	0.3	9.3		24.1	47.6			0.3	-		
42-46		<del> </del> -	62.6	29.0	-	0.1	-	0.2	8.1		25.2	45.7			0.3			
46-50			63.9	28.6	-	-	-	0.2	7-3		26.2	45.0			0.3	-		
50-56			65.3	28.2	-	-	-	0.2	6.3		27.7	44.0			0.4	-		
56-62		+	67.4	24.7	<b>-</b>	<del>-</del>		0.2	7.7	-	26.1	49.0 48.0		-	0.2	-	-	-
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88-96			77.5	17.1	0.1	0.2	0.2	0.5	4.4		32.7	49.5		<del>                                     </del>	0.2	tr.		1
96-108			81.1	14.1	-	0.1	0.1	0.1	4.5		33-5	52.2			0.2	tr.		
	_	<u> </u>		l	l	<u> </u>	<u> </u>	l	<u> </u>	<u> </u>	100	* : :			!			
-		Extractat	ola bases !	581a		6ELa	C	ĒÇ	6G1d				pH	1	BD3		Base sa	turation
Deptn	6N2d	602b	6P2a	6Q2a		Ext.							8Cic	8C1a			503	5C1
(in )	Ca	Me	Na	l K			5A3a		Ext.				(1:1)	(1:1)	Ca/Mg			l
		""		"	Sum	acidity	Sum cations		Ai					(2.1)			Sum cations	NH <sub>4</sub> O
:		<u>'</u>	<u>'</u>	<u>'                                      </u>	meq/100 (	· 	i Cattons	'	_				KCI	H <sub>2</sub> 0			Pct	Pct.
0-6	5.6	1.7				8.6						<u> </u>		6.4			46	1
6-9 <del>1</del>	5.5	1.i				3.2								5.8			70	
9-13	6,0	1.9		L		3.5						<u> </u>		5.8			69	
13-16	6.4	2.8				4.2								5.6			69	
16-19	6.9	3.6				5.1								5.3			67	
19-22	7.0	4.0		<u> </u>		7.2								4.8			60	┡
22-25	7.9	4.4				7.5								4.8			62	
25-28 28-31	8.7	4.7				7.7								4.8			64	
31-33	9.3	4.8				7.0 6.0		-		-	├		<u> </u>	7.0			67	+
33-36	9.7	5.2				6.1								5.0 5.0			70	
- Ju -		<u> </u>	!	<u>,                                    </u>	!		<u>,                                    </u>	!	<u> </u>	<u>!                                      </u>	!	<u>!</u> .	l 	7.0	1 .	<u> </u>		<u></u>
L		Extractab	le bases 5	B1a		6 <b>HL</b> a	CE	ec .	6G1d				PH		803		Base sat	Mention
Depth	6N2d	602b	6P2a	6Q2#		Ext.							8Clc	8C1s			5C3	5C1
(in )	Ca	Mg	Na	K	e	anuditu.	5A3a		Ext				(1:1)	(1.1)	Ca/Mg		_	
			-	"	Sum	acidity	Sum cations		Ai								Sum	NH <sub>4</sub> O/
-	4			·	meq/100 g				-				KCi	H <sub>2</sub> Ω			Pct.	Pct.
36-39	9.1	5.0				6,2								5.1			70	
39-42 42-46	9.9	5.6				6.1							1	5.2			72	
42-46	9.9	5.3 5.8		L		6,1								5.3			. 71	
46-50	10.3	5.8				5.5								5.2			74	
50-56	10.7	6.2				5.4								5.2			76	
56-62	9.4	5.8	ļ	<del>                                     </del>		4.5								5.3	+		. 77_	
62-68	9.3	5.8				4.8								5.4			76	
ZQ0	11.0	6.8				1.5 0.6								7.5			. 92 . 97	
68-78	10 A																CF F	1
78-88	10.0	0.0								_							-21	1
	10.0 b b	0.0				-	_							8.1			21	

- a Part of Project Z-1-2-8
- b Not determined, sample is calcareous.

 $\label{eq:matter} \begin{aligned} & \text{Mt.} = \text{Montmoritionite, Chi.} = \text{chlorite, Vm} = \text{Vermiculite, mi} = \text{mica,} \\ & \text{int} = \text{Montmoritionite, layer, Qtz.} = \text{quartz, Ki} = \text{Kaolinite} \end{aligned}$ 

Relative amounts: blank = not determined, dash = not detected, fr.  $\Rightarrow$  trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant

Soil Type: Fayette silt loam

Soil No.: 144

Location: Carroll County, Illinois. SE 1/4 of SW 1/4 of Sec. 26, T 25 N, R 4 E.

Slope and land form: 5 percent Sampled by and date: H. Wascher, E. P. Whiteside, and R. J. Muckenhirn. September 28, 1944.

Horizon and Beltsville Lab. No.

O to 6 inches. Brown silt loam; weak fine to medium granular structure; friable; moderately vesicular; numerous worm casts; some material from the horizon below. D3552

6 to 9 1/2 inches. Yellowish brown to dark yellowish brown silt loam; fine platy in place; breaks to medium granules; moderate sprinkling of silica flour; moderately vesicular; wormholes and casts common; roots up to one-eight inch in diameter common. D3553

9 1/2 to 13 inches. Yellowish brown silt loam; coarse gramular to medium blocky structure; faint platiness in place; moderately vesicular; sprinkled with silica flour; wormholes and casts few; fibr-D3554 ous roots common.

13 to 16 inches. Yellowish brown silt loam; medium blocky structure; moderately vesicular; sprinkled with silica flour: friable; wormholes and casts few; roots common. D3555

16 to 19 inches. Yellowish brown to moderate brown, silt clay losm; medium blocky structure; slightly vesicular; sprinkled with silica flour; moderately firm; some coatings and specks of brown; roots up to D3556 1/4 inch in dismeter; worm activity not evident.

19 to 22 inches. Yellowish brown to moderate brown silty clay loam; medium angular blocky atructure; sprinkled with silica flour; slightly vesicular; moderately firm; a few filled root channels and worm D3557 casts present; roots few.

22 to 25 inches. Brown to yellowish brown silty clay loam; medium blocky structure; moderately angular, well sprinkled with silica flour; slightly vesicular; occasionally specked with brownish black; roots D3558

25 to 28 inches. Brown silty clay loam; moderate blocky structure; angular; thickly sprinkled with silica flour; slightly vesicular; moderately firm; roots few; worm casts few. D3559

28 to 31 inches. Brown silty clay loam; medium blocky structure; slightly vesicular; coated with silica flour; moderately firm; fibrous roots tending to follow crevices; coats of dark brown and D3560 specks of brownish black on some aggregates.

31 to 33 inches. Brown silty clay loam; medium blocky structure; slightly vesicular; coated with D3561 silica flour; moderately firm; subangular; fine hair-like roots few;

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D3562 vesicular; moderately firm; few roots in crevices.

D3564

36 to 39 inches. Yellowish brown silty clay loam; coarse blocky structure; slightly vesicular; well-D3563 coated with silica flour; slightly firm; many aggregates coated with dark brown and are often in rather large blocks or short columns; roots few.

39 to 42 inches. Yellowish brown silty clay loam; coarse blocky structure; similar to layer above.

42 to 46 inches. Yellowish brown light silty clay loam; coarse blocky structure; similar to layer D3565 above.

46 to 50 inches. Yellowish brown silt loam; weak, coarse blocky structure; moderately vesicular; D3566 silica coatings and brown coatings present; roots few. Friable.

silt loam

SOIL NOS.

S61-II1-50-1 LAB. NOS. 16549-16557

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		.1Blb		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (ps	r cent) 3	₩Ţ	2A2	
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			<b>&gt;</b> 2	
Ĺ		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.0 <b>0</b> 2		
<b>0-</b> 6	Al	-	0.2a	0.2ъ	0.46	2.8	81.5	14.9		37.0	-	
6 <b>-9</b>	A21	-	0.la	0.la	0.3b	1.9	80.5	17.1	43.7		-	
9-13	A22	-	O.la	O.la	0.3b	2.8	74.0	22.7		36.2	-	
13 <b>-1</b> 6	B1	-	Tr.a	0.la	0.2b	1.7	70.7	27.3	38.6	33.9	-	
16-22	B21	-	0.la			2.6	65.2	31.7	36.7	31.3	-	
22-32	B22	-	0.1a	0.1a	0.45	2,2	65.9	31.3	39.0	29.4	-	
32-41	B31	-	Tr.a	Tr.a	1.7b	4.0	66.7	27.6		28.7	-	
4150	B32	-	0.la	0.la	0.6b	2.2	70.0	27.0		29.0	-	
50 <b>-60+</b>	B32	-	0.1ъ	0.16	0.3b	2.2	73.0	24.3	44.3	31.1	-	
C			ORGA	NIC MA		6Cla	*************	WATER	ONTENT	**************************************	***************************************	3724-1-44410 <b>0</b> 9978891
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5.7				0.076	9	0.8	1.35	15.6	7.1			
5.7			0.44	0.053	9 8	1.0			9.5			
5.9			0.34	0.045	8	1.2		•	12.9			
5.8			0.27	0.040	7	1.4			15.2			
5.8			0.21	0.034		1.5	1.41	14.9	14.9	·		
5.6			0.16			1.5			13.2			
5.4			0.14			1.5			11.6			
5.5			0.14			1.6	1.43	9.1	11.4			
	***************************************	moonuma Evena				**************	5°C3	<u>.</u>	Ratio		av 201	8 <b>D</b> 3
5Ala	6№2ъ	EXTRAC 602b	6HLa	CATIONS 6P2a	602a	5Bla	Base	Base	120101		Water	روی
CATION EXCHANGE		3020	одця	OFZ	CACT	مسر	Sat.%	Sat.%		}	at	
CAPACITY	C <sub>o</sub>	Mg	н	No	K	Sum	on Sum		NH) OA	Ext.	15-	Ca/Mg

Soil type: Fayette silt loam

Soil Nos. : S61T11-50-1 University of Illinois Laboratory Nos.: 18887 through 18895

Incation: InSalle County, Illinois; 99 feet west of gate, 219 feet south, 34 feet west-northwest to sampling site, NW160, NRMO, NRMO, NRMO, Section 11, T34N, RLE.
Classification: Gray-Brown Fodzolic.

Natural drainage: Well. Native vegetation: Forest. Present vegetation: Bluegrass. Climate: Hamid temperate. Slope: 5 to 6 percent to south.

Erosion: 7 to 14 inches topsoil remaining.

Elevation: 655 feet.

Parent material: Deep loess over 5 feet thick.

Described by: J. E. Paschke and H. R. Sinclair, October 23, 1961.

Horizon and Lincoln Lab. Number

0 to 6 inches. Very dark grayish brown (10YR 3/2) silt loam; same color crushed; moderate fine and A1 16549 medium granular structure; friable; abundant roots; pH 6.2; clear wavy boundary.

6 to 9 inches. Dark grayish brown (10YR 4/2) silt loam; same color crushed; weak thin platy structure breaking to moderate fine granules; friable; abundant roots; common very dark grayish brown (10YR 3/2) worm channel fillings; pH 5.5; abrupt wavy boundary. 16550

A22 16551 9 to 13 inches. Brown (10YR 4/3 to 5/3) silt loam; weak thin platy structure breaking to moderate very fine and fine subangular blocks; friable; abundant roots; pH 6.0; abrupt smooth boundary.

13 to 16 inches. Brown (10YR 4/3 to 5/3) crushing to 10YR 4/4 heavy silt loam; moderate fine subangular **B**1. blocky structure; friable; light gray (10TR 7/2) thin silt coatings patchy on peds; silt coatings disappear on wetting; common roots; pH 6.0; clear wavy boundary. 16552

16 to 22 inches. Dark yellowish brown (10YR 4/4) crushing to 10YR 5/4 silty clay loam; moderate very fine and fine subangular blocky structure; firm; light gray (10YR 7/2) thin silt coatings discontinuous B21 16553 on peds; coatings not evident upon wetting; common roots; pH 6.0; gradual wavy boundary.

22 to 32 inches. Dark yellowish brown (10YR 4/4) crushing to 10YR 4/4 to 5/4 heavy silty clay loam; B22 16554 moderate medium subangular blocky structure breaking to moderate fine subangular blocks; firm; dark brown (10YR 4/3) thin clay coatings continuous on all ped surfaces; common roots; pH 6.0; gradual smooth boundary.

32 to 41 inches. Dark yellowish brown (10YR 4/4) crushing to 10YR 4/4 to 5/4 silty clay loam; moderate coarse subangular blocky structure breaking to moderate fine subangular blocks; firm; light gray B31 16555 (lowr 7/2) thin silt coatings discontinuous on all faces, disappear on wetting; also dark yellowish brown (lowr 4/4) thin clay coatings discontinuous on vertical surfaces; common roots; pH 5.6; diffuse

41 to 60 inches plus. Yellowish brown (10YR 5/4) crushing to same color heavy silt loam to light silty 16556(41 to clay loam; weak coarse prismatic structure breaking to moderate coarse and medium subangular blocks; 50 inches) coatings the same as in above horizon; common roots; few black (N 2/) iron-manganese concretions; pH 16557(50 to 5.6 to 6.0. 60 inches)

Remarks: Six 3-inch soil cores were taken in each of the following horizons: Al, 2 to 5 inches; A2, 8 to 11 inches; B22, 22 to 25 inches; and B32, 48 to 51 inches. No carbonates to a depth of 70 inches. pH determined with Hellige-Truog pH kit in the field.

SOIL Fayette silt losm SOIL Nos. 11ª LOCATION Ogle County, Illinois

SOIL SIRVEY LABORATORY Beltsville, Maryland LAR Nos. D3492 - D3509

OIL SURVEY											3. Nos		- D35					
		1816	Total					Size clas	ss and parti			1			6А3а			
		<b>-</b> -	Τ	Γ		I. –	I	т -	I	Si					Organic matter	ZA2	rse fragme	nts 36
Depth (In.)	Horizon	Send (2-0.05)	Silt (0.05-	Clay ( < 0.002)	Very coarse	Coarse (1-0.5)	Medium (0.5-0.25	Fine (0.25–0.1)	Very fine	0 05-0 02	Int. 1011	Int. II (0.2–0.02)	(2-0.1)	1	ph	<b>&gt;-</b> 2	2 - 19	19-
<b>,</b> ,		(= 4.00)	0.002)	( - 0.002)	(2-1)	1	1. of =< 2	1	10.23	0.00-0.02	0.002)	10.1-0.02	(2-4,1)		H2O2	Pct.	P	1. o1 76mm
0-24		9.2	75.2	15.6	0.3	0.8	0.5	1,2	6.4	36.3	38.9	43.3	2.8	<del></del>	7·9	tar.	<del></del>	Omim T
23-55 55-95		8.2	77.7	14.1	0.3	0.8	0.4	0.9	5.8	37.3	40.4	43.7	2.4		2.9	tr,		1
53-93 01-331		9.4	77.8	12.8 17.0		9.7	0.5	1.0	7.1	37.7	40.1	45.4	2.3		0.9	tr.		_
95-13 <del>5</del> 135-165	l	7.2	75.8	20.5	0.1	0.4	0.3	0.5	5.8 6.1	38.3 36.3	37.5 35.9	44.4	1.4	1	0.5 0.4	-	ľ	1
64-20		6.7	68.7	24.6		0.2	0.2	0.4	5.9	34.9	33.8	41.0	0.8		0,5	tr.	1	
20-23+		6.0	66.9	27.1	•	0.2	0.2	0.3	5.3	34.6	32.3	40.0	0.7		0.4	-		
31-271 71-32		6.1	63.4	29.0	-	0.1	0.2	0.3	5.5 5.0	33.6 33.8	31.3 29.6	39.3 39.0	0.6		0.3 0.5	-	1	1
32-36		5.8	63.4	30.8	_	0.1	0.1	0.3	5.3	33.0	30.4	38.4	0.5	-	0.4		$\vdash$	-
36-40		6.3	64.3	29.4	-	0.1	0.2	0.3	5:7	34.7 36.4	29.6 20.7	40.6	0.6		0.4			l
44-47		6.3 6.0	66.7	29.4 27.9 27.3		0.2	0.2	0.4	5.1	36.6	30.1	41.9	0.9		0.3	tr.	<del>                                     </del>	$\vdash$
47-50		5.0	68.6	26.4	-	0.1	0.4	0.4	4.1	35.8	32.8	40.1	0.9	]	0.1	-		ĺ
50-55 55-63	- <del></del> -	4.8 5.1	70.0 69.2	25.2		0.1	0.4	0.4	3.9	37.5	32.5	41.5	0.9	<u> </u>	0.1			-
63-72		9.4	67.2	25.7	-	0.2	0.8	0.8	3.3	35.1 35.6	34.1 31.6	38.7 40.0	1.8 6.1	1	0.1	_	1	1
75-84		55.7	31.0	13.3	3.9			20.3	6.4	15.0	16.0	30.0	hq. 3	L	0.1	37		L
		Extractal	ple bases 5	614		6 <b>HLa</b>	C	EC	6G1d				pH		8D3		Base sat	vration
Depth	6N2d	602b	6P2e	6Q2a	i	Ext.			1			1	8Clc	8C1a	}		5C3	5C1
(fn.)	Ca	Mg	Na Na	K	Sum	acidity	5A3a Sum		Ext.	ł		1	(1:1)	(1:1)	Ca/Mg		Sum	NH <sub>4</sub> O
1		1	1	1	i i	ŀ	cations	1	l ."				KÇI	H <sub>2</sub> O			cations	ľ
0-2 <del>2</del>	10.7	5 ^	<del></del>	<del></del>	meq/100 g			T			<b>-</b>	<b></b>	<u> </u>	<u> </u>	<del> </del> -	Ļ—-	Pct.	Pct.
24.54	3.3	5.0 2.3				8.5	1	[				1	1	6.8	1		78 40	
24-5 <del>4</del> 13-94	1.5	1.2		<u>                                      </u>		5.7						L		4.9			32_	L
<del>7\$</del> ~13 <del>\$</del>	3.2	1.7		[ ]		5.1	]							5.0			49	
3-16 <del>5</del> 5-20	4.7 6.0	2.2	1	(		5.6	1	1	1			1	Ì	5.0 5.0			55 57	
20-23 <del>2</del>	7.3	3.1				6.9		1					1	4.9			60	_
建-27월	8.6	3.8				7-4		1						4.9	{		63 66	1
7 <del>3</del> -32 32-36	10.2	4.4	-	<del>  </del>	_	7.5	<del> </del>	<del> </del>	<del> </del> -			<del> </del>		5.0	+ -	<del>-</del> -	68	<del> </del>
36-40	10.4	4.4	1			6.7	1	1				}	1	5.0 5.1			69	1
10-44 14-47	10.3	4.2	<u> </u>	<del> </del>	Ц	6.0	<del> </del>	<del> </del> -		١	<u> </u>	· · · · · ·	۲		<u> </u>	<u> </u>	70	
7-50	10.4	4.1				5.4			[ .				ļ	5.2 5.1	[		71 73	
0-55	10.6	4.0	L	<u> </u>		5.5	<u> </u>							5.2			73	<u>_</u>
5-63	10.5	4.0				4.9								5.2			75	_
3-72 73-84	9.8 5.1	3.7 1.8				4.8	[						}	5.3 5.5			74 69	
12-04	2.1	1.0				3.1	_		<del></del>								V <del>.</del>	
				) [			]								[ ,		ĺ	1
			<u> </u>	├			<del> </del>	-	-			├ <b>─</b> ─┤					<u> </u>	-
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									نــــا			<u></u> _			نــــا			
				Clay Fracti	on Analysis	s 7AID-d						A P-	ant of	Prote	ct Z-1-	2_8		
Depth	Mt.	Chi.	Vm.	Mi.	int.	Qtz.	Kł.	Gibbsite				- 14	- 0 OI	*1000	-			
(ln.)						1	}	1	'									
		l	7A2	. ,		<u> </u>	7.	A3				Mt. = M	ontmorillor	nite, Çhl. =	chlorite, Vi	n. 🛏 Vermi	culite, mi	– mica
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1		1	1			}	]		}						t determine			
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j		1	1															

Soil Type: Fayette silt loam Soil No.: 118 Location: Ogle County, Illinois. NW 1/4 of SW 1/4 of Sec. 24, T 24 N, R 7 E. Vegetation and land use: Vegetation chiefly caks, with undergrowth of brush and sparse grass cover. A few small ash trees, cherry, hazel and dogwood. Slope and land form: 5 percent north.
Sampled by and date: H. Wascher, E. P. Whiteside, and R. J. Muckenhirn. September 25, 1944. Described by: R. J. Muckenhirn Horison and Beltsville Isb. No. Not Samuled O to 2 1/2 inches. Brownish gray silt losm; fine granular structure; contains much partly decomposed D3492 organic matter; many fine roots. D3493 D3494

D3495

D3497

03498

D3500

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One-half inch of partially decomposed leaves, twigs, acorns and grass.

2 1/2 to 5 1/2 inches. Light brownish gray to brownish gray silt losm. Fine granular structure; friable; roots abundant but predominantly less than one-fourth inch in diameter.

5 1/2 to 9 1/2 inches. Light brownish gray to light yellowish brown silt loam; thin platy in place, breaks to fine gramular structure; friable; wormholes and worm casts fairly abundant; roots up to one inch in dismeter moderately abundant.

9 1/2 to 13 1/2 inches. Moderate yellowish brown silt loam; medium platy in place; breaking to flattened coarse granules, irregularly coated with silica flour; friable; wormholes and casts abundant; roots common but predominantly of one-eighth inch in diameter or smaller.

13 1/2 to 16 1/2 inches. Moderate yellowish brown "heavy" silt loam of irregular fine blocky structure; moderately costed with silica flour; few pores and occasional dark specks; wormholes and casts not D3496 abundant; roots few up to one-half inch in diameter. Friable.

16 1/2 to 20 inches. Moderate yellowish brown silty clay loam of medium blocky structure; moderately firm; slightly vesicular; irregularly coated with silica flour; wormholes are very few in number; few roots.

20 to 23 1/2 inches. Dark yellowish brown silty clay of medium blocky structure; compact and moderately firm; abundantly sprinkled with silica flour, very slightly vesicular and compact; worm activity not evident, roots very few.

23 1/2 to 27 1/2 inches. Dark yellowish brown to moderate brown silty clay of medium blocky structure; D3499 very hard, compact; thickly sprinkled with silica flour; very slightly vesicular; roots few.

27 1/2 to 32 inches. Moderate brown silty clay of medium blocky structure; similar to layer above.

D3501 32 to 36 inches. Moderate brown silty clay, similar to layer above.

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40 to 44 inches. Moderate yellowish brown silty clay loam of medium-to-coarse blocky structure; D3503 slightly vesicular; firm; occasional specks of reddish brown mottlings on interior of aggregates.

44 to 47 inches. Light to moderate yellowish brown silty clay losm of coarse blocky structure; dark D3504 brown costings, slightly vesicular; firm; roots very few; silica flour present in moderate coatings; 14011 

SOIL Fayette silt loam

SOIL Nos. 855111-75-1 LOCATION Pike County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551777 - 551785

	т	1B1b						Size clas	s and parti	cle diamete	er (mm) 3A:		-					
	1		Total					Sand		\$I					382		rse fragme	ints 3Bl
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine	_	Int. III	int. 🎞		ļ		2A2 >= 2	2 - 19	19-76
(in.)	1	(2-0.05)	(0.05- 0.002)	( < 0.002)	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0.1-0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)	İ	Cm	- '		t. of
		-			<u> </u>	Pc	t. of <= 2	mm		<u>'                                    </u>				į		Pct.	'	76mm
0-8 8-13	Ap A2		84.8	12.6	-	0.2	0,2	0.4	1.8		36.4	50.3				-	-	
13-17	A3	1	83.1 76.5	14.1 22.1	:	0.1	0.2	0.4	2.1		36.1 37.0	49.3		Į		-	ļ	
17-24	B21	<del> </del>	66.3	32.2	-		-	0.1	1.4		34.7	33.0	i	t	†··			├
24-32	B22	1	65.0	33.9	-		-	0.1	1.0		36.8	29.2		l	ļ	-		{
32-40 40-49	B23	<del> </del>	70.3	30.2	-	-	<del> </del> -	0.1	1.2		38.6 37.0	34.7		<b>├</b>				<del> </del> -
49-57	6		71.7	27.3	-	_	0.1	0.1	0.8		38.6	33.9		i		-		į
57-73			74.4	24.7	_		<u> </u>	0.1	0.8		41.9	33.3				-	<u> </u>	
			l						1		,					}		
	6Ala	İ		<del>                                     </del>				Bulk densit	<u> </u>	4D1	W	ater conte	nt		4C1		рH	
Depth	Organic	Nitrogen	C/N	1	Carbonate		_	4A1e	4A1h	701	]	4B1c	482	Ì	] ""		8Clc	8Cla
(ln.)	carbon		1		as CaCO <sub>3</sub>	as Fe		kibar	Oven dry	COLE	]	>s bar	15 bar		WRD		(1:1)	(1:1)
		1	1	1			{							İ	1	Ì	1	•
6.0	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.	<b> </b>	in/in		KCI	H <sub>2</sub> O
0-8 8-13	0.57	1	<b> </b>	1	1		1	1						1	1	)	1	7.2 6.4
13-17	0.34	_			]			L									1	4.6
17-24	0.34						-											4.7
24-32 32-40	0.27	1	1					1						1		1		4.8
40-49	0.17	<del> </del> -	_	<del> </del> -	-	-	<u> </u>	<b>-</b>			_				-			5.0
49-57	0.17	ĺ		1			]	1						i	Ì			5.1
57-73	0.15			├				<del>  -</del> -								-		5.3
												ĺ		Į				
		Extractat	le bases	5B1s		6на	C	EC	6G1d			F	atios to cla	y I	803		Base sat	uration
Depth	6N2d	602b	6P2a	6Q2a		Ext.	E43-		Fu.A			CEC	Ext.	15-bar	Codition	1	5C3	5C1
(in.)	Ca	Mg	Na	K	Şum	acidity	5A3a Şum		Ext.			Sum	iron	water	Ca/Mg		Sum	NH <sub>4</sub> OAG
	L _	ļ	<u> </u>	ı	meq/100 g		cations	<u> </u>						<b>\</b>			cations Pct.	Pct.
0-8	9.8	0.8	0.1	0.3	1110d/100 B	1,6	12.6	T —									88	
8-13	6.2	0.7	0.1	0.2		3.2	10.4	1				1		1			69	
13-17	5.7 8.7	1.8	0.1	0.3	ļi	7.2	15.1 22.9	<del> </del>									52 59	_
24-32	10.7	5.7	0.1	0.4	ļ	8.7	25.6	{	ļ					1	}	ĺ	66	
32-40	9.7	5.4	0.2	0.4		8.1	23.8		<u> </u>								66	<u> </u>
40-49 49-57	9.6	6.2	0.2	0.4 0.4		7.3 6.6	23.7	ŀ	<b> </b>					ł	1	1	69	
サツーフ!		5.1	0.3	0.3		5.7	20.8		l							L	70 72	L
57-73	9.5	5.0	1 Y.J															
57 <del>-</del> 73	9.5	5.0	V.3	J.J.					!		<u> </u>	'			i			i
57-73	9.5	5.0	V.3		ion Analysi										<u> </u>			
Depth	9.5 Mt.	5.0	Vm.		ion Analysis		Ki.	Gibbsite							<u></u>		<u> </u>	
			Vm.	Clay Fract		s 7Alb-d		Gibbsite		,								
Depth				Clay Fract		3 7Alb-d	Ki.	Gibbsite		,,		Mt. = N		nite, Chl. –	chlorite, V	m. = Verm	iculite, mi	mica,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}							chlorite, V			mica,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}				int. — le Relative	nterstratifie emounts:	id layer. Qt blank ≔ no	z. = quartz, t determine	KI. = Kao d, desh =	linite not detect	ed,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}				int. — le Relative	nterstratifie emounts:	id layer. Qt blank ≔ no	z. = quartz,	KI. = Kao d, desh =	linite not detect	ed,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}				int. — le Relative	nterstratifie emounts:	id layer. Qt blank ≔ no	z. = quartz, t determine	KI. = Kao d, desh =	linite not detect	ed,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}				int. — le Relative	nterstratifie emounts:	id layer. Qt blank ≔ no	z. = quartz, t determine	KI. = Kao d, desh =	linite not detect	ed,
Depth			Vm.	Clay Fract		3 7Alb-d	Ki.	}				int. — le Relative	nterstratifie emounts:	id layer. Qt blank ≔ no	z. = quartz, t determine	KI. = Kao d, desh =	linite not detect	ed,

Soil Type: Fayette silt loam

Soil No.: S55Ill-75-1

Location: Pike County, Illinois. T4S - R6W - Sec. 24 - NE160 - NW40 - SW corner 125 feet E. of center of gr. rd. - 9 feet N. of wire fence.

Vegetation and land use: Rotation pasture

Slope and land form: 7 percent.

Erosion: None

Drainage: Well drained Permeability: Moderate

Parent Material: Peorian losss 100 inches.

Physiography: Top of rounded ridge of deep loess over cherty limestone.

Sempled by and date: Herman L. Wascher, George O. Walker, and Charles E. Downey. October 17, 1955.

Horizon and Beltsville Lab. No.

551777

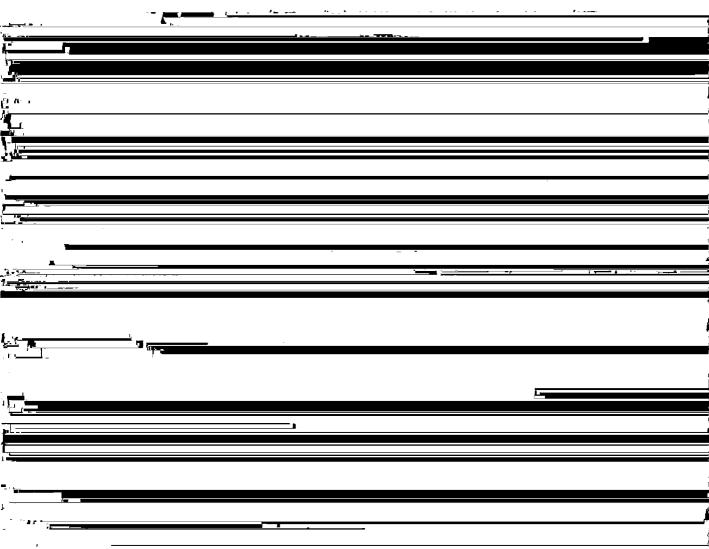
O to 8 inches. Dark grayish brown (10YR 4/2) silt loam, weak, fine to medium crumb structure,

friable. Numerous wormholes.

551778

8 to 13 inches. Brown (10YR 5/3), silt loam, weak, fine, platy structure, friable. Numerous

wormholes.



B21 551780 17 to 24 inches. Same color as A3 horizon except it is more highly coated, silty clay loam, weak columns in place which breaks to a strong, medium, subangular blocky structure, firm.

B22 551781 24 to 32 inches. Dark brown (7.5YR 4/4) slightly coated with light brownish gray (10YR 6/2) and brown (7.5YR 4.5/3.5) clay skins, silt loam, weak columns in place which break to a strong coarse, subangular blocky structure. Firm.

B23 551782 32 to 40 inches. Yellowish brown (10YR 5/4) coated with light brownish gray (10YR 6/2) and brown (7.5YR 4.5/3.5) distinct clay skins, silty clay losm, moderate columns in place which break to large peds of strong, coarse, subangular blocky to irregular blocky structure. SOIL Fayette silt loam

SOIL Nos. 855Ill-75-10 LOCATION Pike County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 551858 - 551866

											3. NOS							
		181b	7-4-1						ss and parti			1						
	İ	<b>—</b> —	Total	_	-			Sand	· · · · · · · · · · · · · · · · · · ·	Si	lt	ļ		1	382		rse fragme	nts 3E
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. 🎞	l	]		2A2 >= 2	2 - 19	19-
(in.)		(2-0.05)	(0.05- 0.002)	( < 0.002	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0.1–0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)	1	Cm		1	ļ
	1	-	1 0.002)	'	·	PG	t. of =< 2	nn		,	1 0.002)	'	<u> </u>	[	ĺ	Pct.		zt. of 76mm
0-7	Al		81.6	16.2	T-	0.1	0.1	0.3	1.7		37.3	46.1				-	1	T
7-12	A2		81.1	14.7	-	0.1	0.1	0.3	3.7		33-3	51.7			1	-	ľ	
12-17	.B1	<del></del>	73.9	23.8	<u> </u>			0.2	2.1		31.3	44.8			L	<u> </u>		
17-23	B21	1	66.5	32.3	-	-	<b>  -</b>	0.0	1,2		31.7	36.0				-		_
23-31	B22a	1	64.6	33.6	-	-	<del>-</del>	0.1	1.7		33.2	33.1	l		i	-	i	
31-39 39-48	B22b B23	<del></del>	67.5	30.3 28.6	<del>-</del> -	-	0.1	0.2	1.9		34.8	34.7	<u> </u>		<b></b>	-	ļ	├
48-68	183	1	69.3 72.1	26.8	_	_	<u>-</u>	0.1	2.0		34.8	36.5 36.0	İ			-		
68-78	ا د	l	73.5	23.9	l 🗀	0,3	0.6	1.0	0.7		37.1 47.1	27.5	l	ļ		] -	į	Į.
	Ī -			"							1,1,0	-1-2					İ	t
		<u> </u>		<u> </u>				<u> </u>								<u> </u>	<u> </u>	
	6A1a			]			<u> </u>	Bulk densit	y.	4D1	<u> </u>	rater conte	nt	i	4C1		pH	_
Depth	Organic	Nitrogen	C/N	1	Carbonate	Ext. iron		4Ale	4A1h		ŀ	4Blc	482				8ÇIc	8C1a
(in.)	carbon				as CaCO <sub>3</sub>	as fe		35 bar	Oven dry	COLE		3≰ bar	15 bar		WRD		(1:1)	(1:1)
	Pct.	Pct.	<u></u>		Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	H <sub>2</sub> O
0-7	1.93	1	[				1	"	1						1			6.6
7-12 12-17	0.50 0.34	1						ļ			1		1	l		l	]	6.0
17-23	0.29	+		-	<del>  -</del>						<b></b>	1		<del> </del>	<del></del>	<u> </u>	-	5.h
23-31	0.27	1						İ			1					İ	l	4.9
31-39	0.22	1					L				L	<u> </u>		1		L	İ	5.0
39-48	0.14																	4.8
48-68	0.16	1	l	İ	[		ľ							l	1	1		5.0
68-78	0.14	<del>                                     </del>	ļ	<u> </u>	-		-	<u> </u>			-	<u> </u>		<u> </u>	<del>                                     </del>	<u> </u>		5.3
		Ì								!								
		Extractat	le bases :	iB1a		6нца	С	EC	6G1d			R	atios to cla	y	8D3		Base sat	uration
Depth	6N2d	602b	6P2a	6Q2a	i i	Ext.	<u> </u>										5C3	5C1
(In.)	Ca	Mg	Na	K	Sum	acidity	5A3a Sum		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum	NH <sub>4</sub> QA
		"-	1		2011	actority	cations		, n			30111	HUII	Water			cations	1111407
	-	·		<u>,                                     </u>	meq/100 g		·	·	·								Pct.	Pct.
0-7	12.2	2.0	0.1	0.7		3.8	18,8								l		80	Γ
7-12	5.1	1.6	0.1	0.3		3.6	10.7							ļ	1		66	
12-17	7.1	3.2	0.1	0.4			16.4 24.4								<b></b>	<b>.</b>	66	↓
17-23 23-31	9.7 10.4	5.1 5.8	0.1	0.6			26.3	ļ						}		l	64 64	
31-39	9.2	6.0	0.2	0.5		9.1	25.0	1							İ	1	64	
39-48	8.0	5.9	0,2	0.5	-		23.5				_					T	62	
48-68	8,8	5.9	0.2	0.4	[ ]	7.5	22.8								l .		67	
68-78	8.6	5.3	0.3	0.3			20.4										71	_
								}										
		<del>                                     </del>	<u> </u>	Clay Fract	ion Analysis	7Alb-d							.,	<u> </u>	<del></del>			<u> </u>
Depth (in.)	Mt.	Çhl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
<b>,</b> ,			7A2															
	4	<u>.                                    </u>	X.ra				7,	A3	L						chlorite, Vi			= mica,
															z. = quartz,			
							ļ		ļ						t determine oderate, xx			
		<u> </u>		· · · · -				<del>  -</del> -										
i		1		l			l	1 :	i l									

Soil Type: Fayette milt Jose

Soil No.: S55II1-75-10 Location: Pike County, Illinois. T4S - R6W - Sec. 7 - SW160 - SE 40 - SW 10 - 35 rds. N. of sec. line,

22 yds. E. of center of gravel road, about 24 yds. S. of woods. Vegetation and land use: Hardwood trees - Hackberry, Hickory, Elm, etc.

Slope and land form: 9 percent.

Erosion: Slight Drainage: Well

Permeability: Moderate

Parent Material: 98 inches of Peorian losss over cherty limestone.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. Movember 8, 1955.

Horizon and Beltsville Lab. No.

Not Sampled

0 to 7 inches. Very dark grayish brown to dark brown (10YR 3/2 to 4/3), silt loam, 551858 moderate, fine, crumb structure. Friable.

7 to 12 inches. Dark brown to vellowish brown (1078 3.5/2 to 5/h). silt loss costed with

Friable. **B**1 Dark brown (7.5YR 4/4), light silty clay loam coated with light brownish 551860 gray (dry) (10YR 6/2), moderate to strong, fine to medium, subangular blocky structure. Friable, B21 17 to 23 inches. Dark brown (7.5YR 4/4), silty clay loam coated with light brownish gray 551861 (dry) (lOYR 6/2), strong, medium, subangular blocky structure. Firm. 23 to 31 inches. Dark brown (7.5YR 4/4), silty clay loam coated with light brownish gray (dry) (10YR 6/2) and reddish brown (5YR 4/3) clay skins, strong, coarse, subangular blocky B22a 551862 structure. Firm. В22Ъ 31 to 39 inches. Same as B22a layer. 551863 B23 39 to 48 inches. Dark brown (7.5YR 4/4), silty clay loam coated with light brownish gray 551864 (dry) (10YR 6/2) and reddish brown (5YR 4/3) clay skins, moderate, coarse, subangular blocky structure. Hard when dry. 48 to 68 inches. Dark brown (7.5 YR 4/4), light silty clay loam, coated with light brownish gray (dry) (10 YR 6/2) and reddish brown (5 YR 4/4) clay skins, weak, coarse subangular, blocky 551865 structure. Hard when dry. 68 to 78 inches. Dark brown (7.5YR 4/4), silt losm coated with reddish brown (5YR 4/4) and 551866 white (10YR 8/1) dry.

98 inches plus. Boring - cherty limestone.

OIL SURVEY	Y LABORATO	IRY <u>Be</u>	ltsville,	Marylar	nd				_	LAE	8. Nos	5110	95 - 5	11098				
	1	1B1b							ss and parti			1						
Depth (In.)	Horizon	Sand (2-0.05)	Silt (0.05-0.002)	Clay ( < 0.002	Very coarse (2-1)	ļ	1	Į.	Very fine (0.1–0.05)	0.05-0.02	1.4 777	Int, II (0.2–0.02)	(2-0.1)		3B2 Cm	2A2 >= 2	2 - 19	19 - 76 ct. of
0-6 6-12 12-22	Ap B1 B2	17.6 17.2 7.6	48.1 42.8	34.3 40.0 59.2	1.0 0.8 0.4	2.0 2.0 1.0	3.2 3.1 1.2	7.5 7.5 3.0	3.9 3.8 2.0	15.0 12.3 6.0	33.1 30.5 27.2	23.1 20.3 9.8	13.7 13.4 5.6			Tr. 2		76mm
22+	C	10.5	33.2 46.6	42.9	1.8	1.6	1.4	3.2	2.5	10.9	35.7	15.4	8.0			2		
							:	Bulk densi				Vater conte					pH	
Depth	6A1a Organic	Nitrogen	C/N	ļ	Carbonate	Ext. iron		4A1e	4A1h	4D1	<u> </u>	4B1c	4B2		4C1		8CIc	8C1a
(in.)	carbon				as CaCO <sub>S</sub>	as Fe		3≼ bar	Oven dry	COLE		³s ber	15 bar	1	WRD		(1:1)	(1:1)
	Pct.	Pct.		<u></u>	Pct,	Pct,	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	H <sub>2</sub> 0
0-6 6-12 12-22 22+	2.42 1.62 0.86									_								5.8 6.0 6.6 8.0
	0.30															<u></u>		0,0
			ble bases	T		6H2a	C	EC	6G1d			- F	Ratios to cla	iy I	8D3		Base sat	5C1
Depth (In.)	6N2d Ca	602b Mg	6P2a Na	6Q2a K	Sum	Ext. acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext, Iron	15-bar water	Ca/Mg		Sum cations Pct.	NH <sub>4</sub> DAd
					meg/100 s				•						-		1	100.
					ļ —						-	-						
		<u> </u>																
Depth	Mt.	Chl.	Vm.	Clay Frac	tion Analysi Int.	5 7Alb-d Qtz.	KI.	Glbbsite	Г	1								
(in.)			7,4	]														
	-	<del>'</del>	x.r		<del></del>	<u> </u>	7	/A3 <u>=</u>	-			Mt. — # Int. — 1	Montmorillo Interstratific	nite, Chl. = d layer, Qt	chlorite, V Z. ~ quartz,	m. = Vern Kl. = Kac	niculite, mi olinite	— mica,
				<u> </u>									amounts:					
					į													

SOIL Frankfort silty clay loam SOIL Nos. S51I11-99-1 LOCATION Will County, Illinois

Soil Type: Frankfort silty clay loam.

Soil No.: \$51111-99-1
Location: Will County, Illinois. T. 35 N., R. 12 E., Sec. 29, SE 1/4, SW 40, SW 10.
Vegetation and land use: Prairie - timber.
Slope and land form: 3 percent to S.
Sampled by and date: P. T. Veale and B. W. Ray. October 22, 1951.

Horizon and Beltsville Lab. No.

Ap 511095 0 to 6 inches. Broken 10YR 5/2, same crushed, very weak subangular to granular silty clay

loam,

B1 6 to 12 inches. 10YR 5/2 spotted with 10YR 6/3, subangular blocky 1/4 inch to 3/4 inch

511096 silty clay.

12 to 22 inches. Broken lOTR 5/1 with some organic coatings, lOTR 6/3 crushed, strong angular blocky 1/4 inch to 3/4 inch clay. B2

511097

22 inches plus. Broken 10YR 7/1, angular blocky 1/2 inch to 1-1/2 inch silty clay.

511098

Notes: Core samples also taken across paved road from sampling site.

SOIL Grantsburg Bilt locate SOIL Nos. 849I11-76-1 LOCATION Fope County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5098 - 50104

		1B1b						Size clas	s and parti	le diamete	er (mm) 3A	1						
			Total					Sand		Sil	lt				382		rse fragme	nts 3E
Depth (In.)	Horizon	\$and (2-0.05)	Silt (0.05–	Clay ( < 0.002)	Very coerse (2-1)	Coerse (1-0.5)	Medium (0.5-0.25)	Fine (0.25–0.1)	Very fine (0.1-0.05)	0.05-0.02	Int. III (0.02-	Int. II (0.2-0.02)	(2-0.1)		Cm	2A2 >= 2	2 - 19	ı
			0.002)	1	(2-1,	   Pc	 t. of -< 2 :	 			0.002)	1				Pct.	PC	t. of _ fomm
1-63	A2		84.6	13.0	T - 1	0.3	0.3	0.9	0.9		46.6					-	1	Π
12-17	B11	}	71.1	26.4		0.4	0.4	0.8	0.9		43.7					-	1	1
20-24	B13		75.1	21,2	0.2	1.0	0.6	0.8	1.1		46.7						<b>└</b>	<b>└</b>
24-27	B21	1	66.2	31.3	0.1	0.5	0.4	0.7	0.8		40.7	<b>i</b> .				-		!
27-33	B22	1	65.8	32.1	-	0.2	0.3	0.7	0.9		39.9					-		
38-45	1823	<del>                                     </del>	73.3	25.0		0.1	0.1	0.6	0.9		43.4					-	<b></b>	↓
52-61	B31.		78.6	18.0	0.1	0.1	0.2	1.6	1,4		41.3					-		İ
									·									
<del></del>	6Ala	<u> </u>	<u> </u>					Bulk densi	y	4D1	y	Veter conte	nt		4C1		рН	
Depth	Organic	Nitrogen	C/N		Carbonate			4Ale	4A1h			4Blc	4£2				8Çic	8¢1
(in.)	carbon				as CaCO <sub>3</sub>	as Fé		⅓ bar	Oven dry	COLE		≯s ber	15 ber		WRD		(1:1)	(1:1
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/la		KCI	H <sub>2</sub> C
1-65	0.72	1															Ī	4.5
12-17	0.24	1	l	l							ľ						]	4.
20-24	0.14			L													ļ	4.
24-27	0.17	1									1						1	4.
27-33	0.10	1					l										1	4.5
<u> 38-45</u>	0.05	·		<del>                                     </del>					<del> </del>		<del> </del>	-					+	5.2
52-61	0.03																	"
																		Γ
<u> </u>		Extractal	ie bases	581a	<u> </u>	6HLa	C	EC	6G1d				etios to cla	y	8D3		Base sat	luration
	euna	- ATL	£000	E02-		F	j		1	1					1	l	503	501

Soil Type: Grantsburg silt loam Soil No.: S49Ill-76-1

Location: Pope County, Illinois. T. 135., R. 5E., Sec. 4, NW 1/4, NW 40, NE 10.

Vegetation and land use: Oak-hickory deciduous cover (forest) with undergrowth of small trees and shrubs.

Slope and land form: 7-1/2 percent.

Sampled by and date: J. B. Febrenbacher, J. E. Giesaking, W. S. Ligon, R. T. Odell, Guy D. Smith, T. T. Veale, Herman L. Wascher, and E. P. Whiteside. November 4, 1949.

Horizon and **Beltsville** Lab. No.

0 to 1 inch. (10TR 3/2) friable silt losm, fine to medium crumb.

Not Sampled

1 to 6-1/2 inches. (10YR 5/3) friable silt losm, weakly developed coarse crumb, abundant 5098

roots, infrequent wormholes with occasional hole filled with Al material.

6-1/2 to 12 inches. (7.5YR 5/6) friable heavy silt loam, weakly developed fine to coarse

Not Sampled crumb, abundant roots, numerous fine wormholes. Horizon boundaries gradational.

12 to 17 inches. (7.5YR 5/6) slightly firm light silty clay loam, weakly developed fine granular arranged into weak subangular blocky. Abundant roots, root and fine worm channels. **B11** 5099

Horison boundaries gradational.

17 to 20 inches. (SYR 5/6) slightly firm very heavy silt loss or light silty clay loss, R12

Not Sampled moderately developed subangular blocky aggregates, occasional black iron-manganese concretion,

frequent roots and root channels. Horizon boundaries oradational.

becasional black iron-manganese concretions. Frequent roots and root channels, upper boundary 50100 gradational, lower boundary sharp. and (10YR 7/1) (40-50).

**B21** 24 to 27 inches. (10YR 5/3) (50-60 percent), latter occurring both as pockets and coatings slightly compact light silty clay loam, well developed subangular blocky aggregates heavily 50101 gray coated (10YR 7/1) occasional small iron-manganese concretions, frequent roots and channels, upper boundary sharp, lower boundary gradational.

27 to 33 inches. (9YR 5/4) (60 percent) mottled (7.5YR 5/8) (20 percent) and (10YR 7/1) (20 BSS percent), compact silty clay loam, well developed medium to coarse subangular blocky aggregates, 50102 some coated (10YR 8/1) and others coated waxy (10YR 4/4), occasional to frequent roots, upper boundary sharp, lower gradational.

33 to 38 inches. Same as horizon above.

B23 38 to 45 inches. Colors similar to layer above, compact heavy silt loam, weakly developed 50103 coarse subangular blocky with gray coatings less abundant and waxy material restricted to fine wormholes and root channels, occasional root and occasional vertical gray channel (old root channels?) 1-1 1/2 inches wide with strong brown (7.5YR 5/6) streaks. Horizons gradational.

45 to 52 inches. Same as horizon above.

SOIL Hagener loamy sand

SOIL Nos. S50111-51-5 LOCATION Lewrence County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

501319 - 501323

		1B1b							ss and parti			I						
	j	L	Total					Sand		Si	It	ļ			3B2		rse fragme	ents
Dapth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fina		Int. III	Int. II				2A2		1,,
(In.)			(0.05- 0.002)	( <b>≈</b> 0.002)	coarse (2-1)	(1-0.5)	I	l	(0.1–0.05)	0.05-0.02		(0.2-0.02)	(2-0.1)		Cm	<b>&gt;</b> 2	2 - 19	15   15   15
0-14	A1	<del> -</del>	9,1	6.6	0.7	11.0	36.6	32.4	126		6 3	18.6			-	Pct.		76m
	A3		9.4	6.3	0.6	11.1	37.1	31.8	3.6		5.3	18.2		ľ		ī	1 .	1
	ci		8.4	5.7	1.1	11.9	38.6	31.3	3.6		5.4	16.5		ļ	ļ	١ī	Į.	ļ
34-80	C2	T	3.1	3.8	1.5	20.8	53.1	16.8	0.9		2.4	5.3			Γ	4		T
80-110	С3	-	3.7	4.2	3.1	21.5	46.2	20.4	0.9		3.0	5.7				4		
																	-	
	L I		<u>.                                    </u>	<u> </u>				Bulk densit	<u>y</u> .	454	. v	ater conte	nt	<u> </u> 		<u> </u>	pH	_
Depth	6A1a Organic	Nitrogen	C/N	ļ	Carbonate	Ext. iron		4A18	4A1h	4D1		4Blc	482	[	4C1		8Clc	Ţ.
(In.)	carbon	111110	) ""	Ì	as CaCO <sub>a</sub>	as Fe			ļ	COLE	•	1			WRD			ļ
					,			⅓ bar	Oven dry	0022		⅓ ber	15 bar		,,,,,		(1:1)	۱ ٔ
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct,	Pct.	Pct.		in/in		KCI	ŀ
0-14	0.42																	1
14-26	0.19						:				l		!		1	1	1	1 3
26-34 34-80	0.12	-		<del>                                     </del>	<del>  </del>				<del>                                     </del>		<del> </del>	$\vdash$		<del> </del>	<del>                                     </del>	<del>  -</del>	<del> </del>	1
80-110	0.03																	1
		Extractab	le bases 5	Bla		била.	ĊI	EC .	6G1d	_		R	atios to cla	ıy	803	<u> </u>	Bøse sat	ura
Depth	6N2d	602b	6P2a	6Q2a		Ext.					ľ				]		5C3	l
(in.)	Ca	Mg	Na	К	Sum	acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum cetions	N
	<b>-</b>			<u> </u>	meq/100 g			<u> </u>									Pct.	L
0-14	4.1	0.3	0,1	0.2		3.5										\	57	1
14-26	2.6	0.3	0.1	0.1		2.7											53	1
26-34 34-80	2.5	0.3	0,1	0.1	1	2.4	<u> </u>		<del>                                     </del>			-			<del> </del>	<del>                                     </del>	56 64	╁
80-110	2.6	0.2	0.1	0.1	[	1.2	[	ļ				Į .		ļ	1	Į.	68	1
		0.7	<b>V.</b> 2						<u></u>				<b>-</b>	_		<u> </u>		-
						- <b>-</b>												
		<u></u>		Clay Fract	ion Analysi	s 7Alb-d					<u> </u>		<u> </u>			<u></u>	<u>l</u>	<u> </u>
ì	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	Ki.	Gibbsite										
	1	1				,	١ .	\3 <del></del>				Mt N	lontmorillo	nite, Chl. =	chlorite, V	m. = Verm	iculite, mi	= n
Depth (in.)		1	7A2 —— X-ra				/											
	<u>.</u>														z. = quartz,	KI. = Kao		arl
									!	ļ		Relative	amounts:	blank — no	z. = quartz, it determine ioderate, xx	KI. = Kao d, dash =	not detect	
						-						Relative	amounts:	blank — no	t determine	KI. = Kao d, dash =	not detect	
												Relative	amounts:	blank — no	t determine	KI. = Kao d, dash =	not detect	

Soil Type: Hagener loamy sand.

Soil No.: 850111-51-5 Location: Lawrence County, Illinois. NW 1/4 SW40 Sec. 10, T.3N R.11W. Vegetation and land use: Flowed for wheat.

Slope and land form: 1-1/2 to 2 percent.

Erosion: None

Drainage: Very good. Parent Material: Sandy water-laid and wind reworked sediments.

Sampled by and date: W. R. Oschwald, E. G. Knox, R. H. Ruse, and J. B. Fehrenbacher. August 7, 1950.

Horizon and Beltsville Lab. No.

0 to 16 inches. Dark reddish brown (5YR 2.5/2) heavy loamy sand.

501319

16 to 26 inches. Dark reddish brown (5YR 3/2) to dark brown (7.5YR 3/2) loamy sand to sand.

A3 501320

26 to 34 inches. Dark reddish brown (5YR 3/4) medium sand.

C1 501321

02 501322 34 to 80 inches. Dark brown (7.5YR 4/4) and brown (10YR 4/3) medium sand.

80 to 110 inches. Dark brown (7.5YR 4/4) medium sand very faint hint of iron accumulation.

501323

110+ inches. Gravel or loamy gravel.

Not Sampled

Notes: Colors determined on moist samples in the field.

SOIL SURVEY LABORATORY Lincoln, Nebr. February 1964

SOIL TYPE Herrick LOCATION Macoupin County, Illinois silt loam

i		20-00-00-00-00-00-00-00-00-00-00-00-00-0	1Bla	***********	PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	r cent)	381		
	DEPTH INCHES		VERY				VERY					2A2	TEXTURAL
Ì	INCHES	MORIZON	COARSE	COARSE SAND	MEDIUM	FINE SAND	FINE SAND	SILT.	CLAY			>2	CLASS
I			2-1	1-0.5	0.5-0.25	0, 25-0, 10	0.10-0.05	0.05-0.002	< 0.002	0, 2-0, 02	0.02-0.002		]
	0-8	Αp	0.2a	1.1	1.9	3.5	1.9	74.2	17.2	37.8	39.9	-	T
	8-10	AI2	0.4ъ	1.4b	1.9	3.2	1.8	69.7	21.6	35.1	37.8	-	1 1
	10-15	A2	0.40	1.3c	2.0	3.1	1.7	70.0	21.5	33.5	39.6	-	!!
	15-19	B1.	0.5e	1.2b	1.8	3.0	1.7	66.4	25.4	35.2	34.3	-	1

Soil type: Herrick silt loam Soil Nos. : 560111-59-1

Location: Macoupin County, Illinois; TLON, R6W, Section 36, NE160, NE160, NE10, 540 feet south and 655 feet west of northeast corner of NE10 in center of "T" road junction (route 108 and road to south).

Parent material: Loess.

Drainage: Imperfect, somethwat poorly. Slope: 1/2 percent to southwest. Classification: Brunizem-Planosol intergrade.

rnyslography: Loess covered Illinoian till plain. Vegetative cover: Corn, near soybeans sown to wheat.

F. J. Carlisle, J. B. Fehrenbacher, C. E. Downey, G. O. Walker, D. B. Fhillips, and J. F. Steinkamp, October 18, 1960.

Horizon and Lincoln Lab. No.

Ap 14322

A12

O to 8 inches. Very dark gray (10YR 3/1) to very dark brown (10YR 2/2) silt loam; dry colors dark gray (10YR 4/1) with common spots 1 to 2-mm. across of gray to light gray (10YR 6/1); cloddy (massive) to very weak medium granular structure; friable; considerable gray (10YR 6/1 dry) silt flecks; many grayish brown (10YR 5/2 moist) segregated silt patches 1- to 2-mm. across; few fine pores, quite compact; few to common very dark grayish brown (10YR 3/2 moist) iron concretions; pH 6.0; abrupt amount boundary.

8 to 10 inches. Black (10YR 2/1) silt loam; dark gray (10YR 4/1 dry) with many blanched silt grains on ped surfaces; moderate fine subangular blocky structure arranged in weak medium to thick plates due to plow sole; friable; common gray (10YR 6/1 dry) grainy silt coats; few fine pores throughout; common fine very dark grayish brown (10YR 3/2) iron concretions; pH 5.7; clear smooth boundary. 14323

10 to 15 inches. Black (10YR 2/1) to very dark gray (10YR 3/1) silt loam with 25 percent of area having color of dark grayish brown (10YR 4/2); dry colors are faintly variegated dark gray (10YR 4/1) and dark grayish brown (10YR 4/2); moderate fine subangular blocky structure arranged very weakly in medium plates; friable; many blanched grayish brown (10YR 5/2 wet) or gray (10YR 6/1 dry) silt grains on ped surfaces; many fine pores throughout peds; common fine very dark grayish brown (10YR 3/2) concretions; pH 5.7; A2 14324

clear smooth boundary.

15 to 19 inches. Black (10YR 2/1) to very dark gray (10YR 3/1) silty clay loam with very dark grayish brown (10YR 3/2) ped interiors; few fine distinct yellowish brown (10YR 5/8) mottles; dry colors of ped gurfeges dark gray (10YE h/1) and dark grayish hours (10YE h/2) to give faint notten, underto to attempt to attempt to the faint notten. 14325

SOIL TYPE Herrick LOCATION Montgomery County, Illinois silt loam

SOIL NOS. S60II1-68-2 LAB. NOS. 14312-14321

######################################	15 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to 100 to	lBla				E DISTRIB	üTION (in			3A1	*****	
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURA CLASS
_		2-1	1-0.5			0.10-0.05	0.05-0.002	< 0.002		0.02-0.002		
0-7	Àρ	0.2a	1.1a	1.9a	2.7	1.7	75.0	17.4	36.7	41.3	-	
7-10	A12	0.59	1.1b	1.6a	2.5	1.6	71.6	21.4	34.7	39.7	-	
10-15	A2	0.4ъ	1.4ъ	1.7a	2.6	1.6	70.2	22.1	33.7	39.3	-	
15-18	B11	0.7b	1.3ъ	1.6a	2.28	1.4	68.2	24.6	30.1	40.5	-	
18-22	B12	о.8ъ	1.10	1.la	1.7a	1.2a	65.3	28.8		37.1	-	
22-29	B21	0.27	0.5ъ	0.7b	0.9a	0.9a	57.4	39.4	23.9	34.8	-	1
29-40	B22	0.5ъ	1.0b	0.6ъ	0.90	0.8c	58.8	37.4	23.6	36.4	-	
40-47	B23	0.25	0.6ъ	0.50	0.70	0.8c	67.5	29.7	27.5	41.1	-	Ì
47-54	<b>B</b> 3	0.2b	о.8ъ	0.60	0.8a	0.7a	71.9	25.0	33.3	39.7	-	
54-65 801a	C1.	0.2a	0.9	1.2	1.9	1.5	74.2	20.1	37.6	39.0	_	
8Cla	6Gla	6Ele	ORG	ANIC MA	TTER	6Cla		Bul	k Dens	ity		4B2
		arbon	6Ala	6Bla		Ext.						l
рĦ	KC1-	te as	ORGANIC	NITRO-		Iron	Field-	Moist	30-	Cm.	0.D.	15-Ba:
_	Ext.	CFCO	CARBON	GEN	C/N	as Fe	419	+Ala	4B3	4Alc	4Alh	Water
1:1.	me/MQg	96	%	%		. 3	% W.	g/cc	% W.	.g/gc.	_g/cc	<b>4</b>
6.3				0.118	13	0.5				_		
5•7	-			0.118		0.6						9.8
5.4	-			0.093	13	0.8	6.7	1.46	25.2	1.36	1.46	9.6
5.5	-			0.076	12	0.7			•			11.7
5.6	Tr.			0.068	11	1.0			•			13.8
5.4	0.1		0.57	0.056	10	1.2				_ ,.	_	18.4
5.7	Tr.		0.35			1.5	13.4	1.66	27.2	1.44	1.70	18.3
6.6		-	0.21	Į		1.5						15.2
	I		0.18	Į		1.5	Į	i				12.2
6.2 6.3	,		0.12					1.58		1,50,		9,6.

Soil type: Herrick silt loam Soil Nos. : 560III-68-2

Location: Montgomery County, Illinois; TLON, R5W, Section 10, NW160, NERO, 510 feet south of center of road

and 253 feet west of northeast corner of NELO.

Parent material: Loess.

Drainage: Somewhat poorly.

Classification: Brunizem intergrading to Planosol. Physiography: Loess covered Illinoian till plain.

Slope: 1/2 percent to north. Erosion: None. Vegetative cover: Soybeans, field sown to wheat.

Described by: G. O. Walker, C. E. Downey, J. B. Fehrenbacher, F. J. Carlisle, V. G. Link, J. F. Steinkamp, and D. B. Phillips, October 18, 1960.

Horizon and Lincoln lab. No.

0 to 7 inches. Black (10YR 2/1) to very dark gray (10YR 3/1) silt loam with a few small areas of grayish brown (10YR 5/2) segregated silt grains; dry color dark gray (10YR 4/1); weak medium granular structure; Ap 14312

friable; few fine pores; pH 6.8; abrupt smooth boundary.

7 to 10 inches. Black (10YR 2/1) silt loam with some small (1 to 2-mm.) flecks of very dark gray (10YR 3/1); A12 14313 dark gray (10YR 4/1 dry) with common concentrations of blanched silt in patches less than 1-mm. across; scattered blanched silt grains on most surfaces; moderate fine subangular blocky structure with weak medium to coarse plates which is probably a plow sole effect; friable when moist; common fine tubular pores;

pH 6.5; clear smooth boundary.

10 to 15 inches. Very dark gray (10YR 3/1) and dark grayish brown (10YR 4/2) silt loam; colors are in equal proportions; dry colors dark gray (10YR 4/1) and gray (10YR 5/1) in a fine faint pattern; the 5/1 color A2 14314 represents a relatively high concentration of very small (less than 1-mm.) patches of blanched silt; moderate fine subangular blocky structure with weak medium plates or faint horizontal lineation; friable when moist; few very dark gray (10YR 3/1) clay films; some grainy silt coatings grayish brown (10YR 5/2) moist and light gray (10YR 6/1 to 7/1) when dry; many fine pores; common fine very dark grayish brown (10YR 3/2) iron concretions; pH 5.6; clear smooth boundary.

15 to 18 inches. Very dark grayish brown (10YR 3/2) to dark grayish brown (10YR 4/2) light silty clay loam R1 1

SOIL Hosmer silt loam

SOIL Nos. 862II1-2-1 LOCATION Alexander County, Illinois

SOIL SURVEY LABORATORY Lincoln, Nebraska

LAB. Nos. 16973-16983

March 1966

	Methods:	<u> </u>	1В1Ъ,	2Al, 2				Size clas	s and parti	cle diamete	er (mm) 2/	A1						
		<b></b>	Total		1			Sand	o ene para	Si		<del>"</del>		1		2A2 Coar	rsa fragme	ents
		54-4	Silt	Clay	Very	A	Medium	Fine			77	i i		]				Т
Depth (In.)	Horizon	Sand (2-0.05)	(0.05-	( < 0.002)	coarse	Coarse (1-0.5)			Very fine	0.05.000	Int. III	Int. II		1		<b>&gt;-</b> 2	2 ~ 19	19
<b>(</b> ,		(2-0.03)	0.002)	( = 0.002)	(2-1)	(1-0.5)	10.5-0.25	(0.25-0.1)	(0.1-0.05)	0.05-0.02	0.002)	(0.2-0.02)	(2-0.1)	1	i	ĺ	Po	ct. of
		-					t. of << 2 :									Pct.	7	76m
0-6	Ap	4.0	84.7	11.3	Tr.a	0.18	0.la	0.46	3.4	54.1	30.6	57.9	0.6	ļ		1		
6-8	A2	3.4	82.9	13.7	Tr.a	0.1a	O.la	0.46	5.85	48.4	34.5	51.5	0.6	1		Tr.		
8-13	B1	3.5	78.9	17.6	Tr.a	0.1a	0.18	0.56	2.80	43.6	35.3	46.7	0.7			Tr.	-	+-
3-21	B21 B22	3.4	78.5	18.1	Tr.a	0.14	0.14	0.4a	2.80		35.0	46.6	0.6	İ		Tr.		
1-29 9-34	A'2-B'2	3.6	77.8	18.6 15.6	0.2a	0.8a 1.0a	0.4a	0.4a 0.4a	1.80	44.1 46.4	33.7 33.9	46.1 48.7	1.8 2.0			Tr.		
9-34 94-43	B'2	2.9	74.3	22.8	Tr.a	0.48	0.3a		2,10		34.6	41.8	1.0					+
2 55	B' 31	2.6	76.9	20.5	Tr.a	0.48	0.2a	0.3a 0.3a	1.70	39.7 41.6	35.3	43.5	0.9			Tr.		
3-55 5-68	B' 32	2.4	77.1	20.5	Tr.a	0.25	0.28	0.38	1.70		35.0	44.0	0.7			Ir.		ı
8-82	B' 33	2.2	75.1	22.7	Tr.a	0.24	0.1a	0.2a	1.76		35.1	41.8	0.5			-		╁
2-88	B·33	2.2	74.8	23.0	Tr.a	0.24	0.la	0.2c	1.7		33.9	42.7	0.5			I -		ı
			, ,,,,			<b></b>	<u> </u>			70.7	33.7	75.0	U.,	L	<u> </u>			<u>_</u>
	6Ala	6 <b>Bla</b>		Ī			<u>L</u>	Bulk densit		4D1	i		ter Ço	stent			pН	
Depth	Organic	Nitrogen	C/N		Carbonate	ł	4Ala	4Ale	4Alt	COLE	434	4B3	4В1ъ	4B2	4C1		i	<b>⊺8</b>
(In.)	carbon	-	l '		as CaCO <sub>3</sub>	i	Field-		Air-		Field-		L	_	1/3-min-		l	l
	l a			ļ	Ĭ		State	30-Cm.	Dry		State	30-Cm	1/3-Ba :	15-Baı	us 15-		l	П
	_ ₫	۱.,		1		i		l .				_ 1			Bar		l	ı
	Pct.	Pct.			Pct.		g/cc	g/cc	g/cc		P¢t.	Pct.	Pct.	Pct.	nAn.			╀
0-6 6 <b>-8</b>	1.20	0.105	ᄁ	Ì		ł	1.28	1.23	1.27	0.010		25.5	25.3	5.5	0.24		l	l
0-0 8-13	0.55	0.070	<b>8</b> 6	1			1.40	1.37	1.41	0.010	17.3	26.1	20.1	6.0	0.19		ı	l
3-21	0.25	0.039	-		†	l	1:48	1.46	1.48	0.010	20.5	21.3 25.8 24.6	22.9 23.6	7.7 8.4	0.22	<b>—</b> —		1
1-29	0.10						1.52	1.49	1.54	0.010	22.2	24.6	23.4	8.6	0.22		l	Γ
9-34	0.07	1 .	1	[			1.54	1.52	1,56	0.010		23.2	23.2	7.2	0.22 0.24		l	
34-43	0.06						1.59	1.56	1.63	0.014		23,2 20.8	25.2	10.4	0.23			T
3-55	0.06	1	ł		i '	ł	1.56	1.49	1.59	0.020		27.7	25.6	9.7	0.24		l	١.
3-55 5-68	0.06							_			l		26.5	9.6		ĺ		
8-82	0.06						1.55	1.45	1.60	0.032	23.0	29.3	29.0	11.5	0.25			
12−88 12−88	0.06	1				ł	<b> </b>							11.7	-	ĺ		
		5.4			<u> </u>	7		<u> </u>	7=33		<u> </u>			<u> </u>	050		<u> </u>	느
	6N2a	602a	le bases 5 6P2a		·	6HLa Ext.		Exch.	Ю1- 601р						8D3		Base sat	
Depth	OMER	OUZE	OFZ	692a		Acidity		5Ala	Ext.						Ca./Mg		5C3 Sum	
(In.)	Ca	Mg	Na	к	Sum	witor@	Sum	مندر	Al.					ļ	Cer\ talk		Cations	MI
							Cations	NH <sub>L</sub> OAc										1
				·	meg/100 g									l	L		Pct.	
0-6	5.9	0.9	Tr.	0.2	7.0	4.9	11.9	8.3	-					[			59	Τ.
6-8	3.2	1.0	Tr.	0.1	4.3	7-5	11.8	8.1	0.5		1			1	3.2		36	
8-13_	2.8	1.4	0.1	0.2	4.5	9.4	13.9	9.7	2.0						2.0		32	$\perp$
3-21	1.9	1.5	0.1	0.2	3.7	10.1	13.8	10.1	3.8		1				1.3		27	
1-29	1.9	1.6	0.1	0.2	3.8	10.4	14.2	10.5	3.7						1.2		27 28	
9-34	1.4	1.6	0,2	0.2	3.4	8.7	12.1	9.0	2.9		<del></del>	ļ		-	0.9		58	╀
4-43 3-55	2.9 3.2	3.4	0.5	0.3	7.1	10.9 8.5	18.0	13.6	3.4		]			ŀ	0.8		39 47	
	3.2	3.5 4.2	0.6 0.8	0.2	7.5	6.4	16.0	12.4 12.4	1.7 0.6		1	•		1	0.9		60	
5 60			. V.O	. ∪.∠	」 グ・フ・	U.+	15.9	4 - 24	U.0		L	1		i	1.0			+-
5-68					13.0	6.6	10 4	14 0	( )				, i	į.	ווו	1 )	66	1 '
5-68 8-82 2-88	6.2	5.4	1.1	0.3	9.5 13.0 13.5	6.6 6.7	19.6	14.9 15.6	0.4				·		1.1		66 67	

Depth (in.) NH<sub>L</sub>OAc CEC 15-Bar Water 0-6 6-8 8-13 13-21 21-29 29-34 34-43 43-55 55-68 68-82 82-88 0.49 0.73 0.59 0.55 0.56 0.56 0.58 0.44 0.46 0.46 0.46 0.47 0.60 0.60 0.47 0.51 0.51

 <sup>5. 5-25%</sup> Fe-Mn nodules.
 25-50% Fe-Mn nodules.
 4.5 Kg/M<sup>2</sup> to 60 inches. (Method 6A)

Soil Type: Hosmer silt loam

Soil Nos.: 962111-2-1

Location: Alexander County, Illinois, Tl4S, R2W, Sec. 21, SW 160, NE 40, SE 10, about 100 feet southeast of woods

line.

Parent Material: Deep losss. Physiography: Upland colluvial or valley-phase slope.

Slope: 19 percent.

Drainage Class: Moderately well. Vegetative Cover: Grass (pasture).

Erosion: Moderate.

Sampled by: R. B. Grossman and G. S. Holmgren, May 22, 1962. Described by: G. O. Walker, J. B. Fehrenbacher and W. D. Parks.

Horizon and Lincoln Lab. No.

Ap 0 to 6 inches. Dark grayish brown (10YR 4/2) silt loam; weak thin and medium platy structure breaking to weak fine crumb structure; friable; many roots; pH 5.6.

A2 6 to 8 inches. Brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure; 16974 friable; few dark brown (7.5YR 4/2) worm casts and many roots; pH 5.2; clear smooth boundary.

8 to 13 inches. Dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; many roots; pH 5.2; clear smooth boundary.

13 to 21 inches. Dark yellowish brown (10YR 4/4) heavy silt loam to light silty clay loam; moderate medium subangular blocky structure; firm; peds coated with light brownish gray (10YR 6/2) silt; pH 5.3; clear smooth boundary.

B22 21 to 29 inches. Yellowish brown (10YR 5/4) silty clay loam with many coarse distinct grayish brown (10YR 5/2) mottles; moderate medium subangular blocky structure; firm; few very dark brown (10YR 2/2)

Fe and Mn concretions and peds coated with thin light brownish gray (10YR 6/2) silt; pH 5.4; clear smooth boundary.

A'2-B'2
29 to 34 inches. Hight brownish gray (10 NR 6/2) heavy silt loam to light silty clay loam with common medium prominent dark brown (7.5 NR 4/4) and few fine distinct yellowish brown (10 NR 5/6) mottles; weak medium and coarse subangular and angular blocky structure; firm; moderately fragile, many medium prominent black (10 NR 2/1) Fe and Mn concretions and some black coatings from concretions and few very thin brown (10 NR 4/3) clay films on the peds; pH 5.3; clear smooth boundary.

B'2 34 to 43 inches. Dark yellowish brown (10YR 4/4) light silty clay loam with many coarse distinct light brownish gray (10YR 6/2) and few medium prominent dark brown (7.5YR 4/4) and few medium prominent strong brown (7.5YR 5/8) mottles; weak coarse prismatic structure breaking to weak medium angular blocky structure; firm; moderately fragile; common medium prominent black (10YR 2/1) Fe and Mn concretions, and occasional tongues of A'2 silty material; pH 5.0; gradual wavy boundary.

B'31 43 to 55 inches. Dark yellowish brown (10YR 4/4) heavy silt loam to light silty clay loam with common 16980 medium distinct light brownish gray (10YR 6/2) and many medium prominent dark reddish brown (5YR 3/4) mottles; weak coarse primmatic structure breaking to weak coarse angular blocky structure; firm; strongly fragile; common fine prominent black (10YR 2/1) Fe and Mn concretions; occasional roots and few holes filled with dark yellowish brown (10YR 4/4) silt; pH 5.4; gradual and arbitrary boundary.

B'32
16981

55 to 68 inches. Dark yellowish brown (10YR 4/4) heavy silt loam to light silty clay loam with few medium prominent dark reddish brown (5YR 3/3) and common medium distinct light brownish gray (10YR 6/2) mottles; weak coarse primmatic structure breaking to weak medium angular blocky structure; firm; fragile; thin discontinuous dark brown (7.5YR 4/4) clay films on peds; common medium black (10YR 2/1) Fe and Mn concretions; pH 5.8; gradual arbitrary boundary.

B'33 68 to 82 inches. Dark yellowish brown (10YR 4/4) heavy silt loam to light silty clay loam with few fine distinct light brownish gray (10YR 6/2) mottles; weak medium and coarse angular blocky structure; firm; fragile; thin discontinuous dark brown (7.5YR 4/4) clay films and occasional thick film of Fe and Mn coating which reacts much more rapidly than clean surfaces when 6 percent hydrogen-peroxide is applied; many medium prominent black (10YR 2/1) Fe and Mn concretions and few discontinuous small pores in the peds; pH 6.0; arbitrary boundary.

16983 82 to 88 inches. Same as horizon above.

Remarks: This solum is very thick and the fragipan is strongly expressed. The fragipan is very brittle or fragile in the B'31 horizon. The pan is also thicker than usual in this mufile. Point of impation with billeids along

Iandscape Profile:

O Hosmer S62II1-2-1

Horizontal Scale: 50 feet

Vertical Scale: 5 feet

SOIL SURVEY LABORATORY Lincoln, Nebr. 1/23/58

SOIL TYPE Hosmer LOCATION Gallatin County, Illinois silt loam

SOIL NOS. S56I11-30-2 LAB. NOS. 5533-5541

14688457949349454999		1Bla	52414171441214 <del>3</del> 121	PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	r cent) 3.	Ä	5000-010-15-1600005	402492252222244994994
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND		VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAL CLASS
		2-1	1-0.5			0.10-0.05		< 0.002	0.2-0.02	<b>0</b> 02 <b>-00</b> 02	(<19mm	)
0-8	Aр	0.2a	0.3a	0.2a	0.5a	0.6a	85.7	12.5	<b>3</b> 9.6	47.0	1	sil
8-13	A2	-	0.la	O.la	0.2a	0.3a	81.8	17.5	33.9	48.3	_	sil
13-23	B1.	_	-	-	0.la	0.3a	71.5	28.1	28.0	43.9	-	sicl
23-30	B21	-	-	-	0.la	0.4a	74.4	25.1	31.6	43.3	-	sil
30-34	A2B2m	-	-	O.la	0.3a	0.5a	79.3	19.8			-	sil
34-45	B2lm	-	0.la	0.la		0.4a	79.1	20.0			Tr.	sil
45-61	B22m	0.1	0.3ъ	0.50		0.96	78.6	18.4	36.5		Tr.	sil
61-79	B3m	0.5	1.56			4.40	69.0	16.3			Tr.	sil
79+	D	0.8	1.7b	2.40	5.9b	4.7b	65.6	18.9	39.5	34.2	Tr.	sil
*****************	Hg			HIC MA		8868324348884(48488)	ELECTRI-	6Е1а	************	c		CONTEN
8Cla	- <u>  </u>		6Ala			EST#	CAL CONDUC~	, J.		Bulk	c	482
9024			ORGANIC			SALT (BUREAU	TIVITY EC = 103	CoCO <sub>3</sub>	GYPSUM		Field-	
	1:5	7:10	CARBON	GEN	C'N	`CÛP)	MILLIMHOS	equiv- alent	SOIL	sity	State	15-Bar
1:1			98	%			PER CM	-5		g/cc	%	%
5.7			1.14	.1.08	11.					1.31	21.8	5.0
5.5			0.39	.044	<b>9</b> 8					1.32	10.5	6.3
5.2			0.30	.૦૩૯	8							10.9
5.0			0.13	.023						1.40	12.8	10.2
4.8			0.10							1.42	12.9	8.9
4.9			0.08							1.49	16.9	10.4
5.2	j i		0.06									9.1
6.0			0.06							1.52	17.6	
5.8	l		0.05					-		1.61	16.2	1 * -
5Ala		EXTRAC		CATIONS		501	5°C3		5 <b>A3</b> a		803	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
GATION	6 <b>N</b> 2b	602b	бніа.	6P2a	692a	Base	Base	Sum	Sum		_	
CHANGE APACITY	Ca	Mq	н	Ne	ĸ	Sat.%	Sat.%	Ext.	Ext.		Ca/Mg	
H <sub>L</sub> Ac						NH) <sub>4</sub> Ac	on Sum		Cations			
<u> </u>	<del> </del> -	<del></del>	alents per	100g. sol			Cations	me/	100g			ļ
7.1	2.1	1.3	4.0	-	0.8	59	51	4.2	8.2		1.6	

Soil type: Hosmer silt loam

Soil Nos. : \$56711-30-2

Location: Gallatin County, Illinois; 85 feet west of center of T road south; 27 feet south of right-of-way of east-west road, Illinois Highway 141; NE160, NE40, NE10 of Section 24, T75, R8E.

Vegetation: Bluegrass, goldenrod, and ragweed.

Drainage: Moderately well drained. Erosion: Slight.

Relief: 2 percent slope.

Sampled by: J. K. Ableiter, O. C. Rogers, R. T. Odell, A. Beavers, and G. O. Walker, October 31, 1956.

Horizon and Lincoln Lab. Number

B3m 5540

0 to 8 inches. Brown (10YR 5/3 to 4/3 moist) silt loam; very weak fine and medium granular structure; Ap 5533

friable when moist; numerous small roots and small worm casts; abrupt smooth boundary.

8 to 13 inches. Brown to strong brown (7.5YR 5/4 to 5/6 moist) silt loam; very weak thick platy to weak fine subangular blocky structure; friable when moist; contains numerous dark brown small worm casts; 5534

abrupt smooth boundary.

13 to 23 inches. Dark brown to brown (7.5YR 4/4 to 5/4 moist) silt loam; a few ped faces have thin coating of brown (10YR 5/3 moist); moderate fine and medium subangular blocky structure; friable when 5535

moist; clear wavy boundary.

23 to 30 inches. Strong brown (7.5YR 5/6 moist) silt loam to light silty clay loam; clay skins of dark brown to brown (7.5YR 4/4 to 5/4 moist) are common; a few thin coatings, root channels, and crack fillings of light gray (10YR 7/2 moist); strong coarse and very coarse subangular blocky structure; 5536 very weak medium prismatic structure; firm when moist; clear wavy boundary.

A2]32m 30 to 34 inches. Strong brown (7.5YR 5/6 moist) heavy silt losm; numerous cracks both vertical and horizontal, streaks, and coatings of pale brown (10YR 6/3 moist); the pale brown color is about 25 5537

percent of horizon; a few thin coatings and streaks of very dark brown (10YR 2/2 moist); weak medium and

when moist; the strong brown material is brittle when dry and represents the upper part of the fragipan; clear wavy boundary.

34 to 45 inches. Strong brown (7.5YR 5/6 moist) heavy silt loam; pale brown (10YR 6/3 moist) coating and vertical crack filling, the cracks being up to 1/8-inch diameter; dark brown (7.5YR 4/4 moist) clay 1921m 5538 skins are few and thin; massive to very weak coarse blocky structure; firm when moist; gradual wavy boundary.

45 to 61 inches. Brown (7.5YR 4/4 to 5/4 moist) silt loam; cracks filled with pale brown (10YR 6/3 moist) and gray (10YR 6/1 dry); number of cracks decreases with depth; a few dark brown (7.5YR 4/4 to R22m 5539 4/2 moist) clay skins; very dark brown (lOYR 2/2 moist) streaks and thin coatings are common; massive to very weak very coarse prismatic structure; firm when moist; diffuse wavy boundary.

61 to 79 inches. Brown (7.5YR  $^{4}/^{4}$  to  $^{5}/^{4}$  moist) silt loam; streaks and crack filling of pale brown (10YR  $^{6}/^{3}$  moist); cracks are up to  $^{1}/^{4}$ -inch diameter and decrease in number with depth; this horizon represents a mixture of losss and till with a noticeable increase, with depth, in very fine sand; a few small pebbles present; massive to very weak very coarse prismatic structure; firm when moist.

79 inches plus. Reddish brown (5YR 4/4 moist) silt loam; a few streaks of light brownish gray (10YR 6/2 moist) about 12 inches apart; material is largely weathered till; massive; firm. 5541

6**⊼2a** 

Ca

Depth

(In.)

602a

Na

692a

Sum

8D3

Ca/Mg

501

5C3

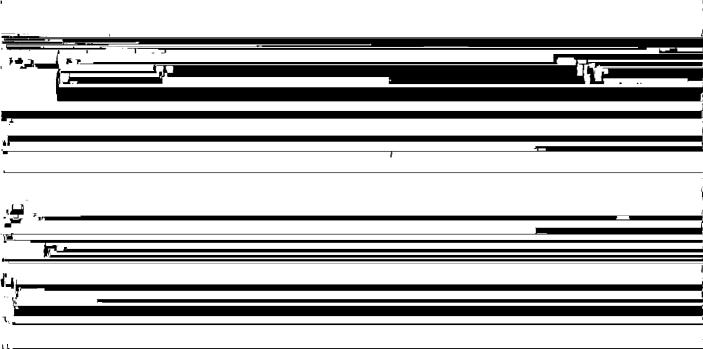
Sum

Cestaionas NH<sub>L</sub>CAc

Dr.

SOIL Hosmer silt loam SOIL Nos. S62111-44-2 LOCATION Johnson County, Tilinois

SOIL SURVEY LABORATORY Lincoln, Nebraska \_ LAB. Nos. <u>16963-16972</u> March 1966 General Methods: 1A, 1Blb, 2A1, 2B Size class and particle diameter (mm) 3A1 Sand Sift 2A2Coarse fragments 4Elc Moved Herizon Silt Very Depth 2 - 19 | 19 - 76 > 2 Clay (1-0.5) (0.5-0.25) (0.25-0.1) (0.1-0.05) (0.05-0.02) (0.02-0.02) (0.2-0.02) coarse (2-1) (ln.) (2-0.05) (0.05-0.002) (< 0.002) (2-0.1)Pct of Pct. of = 2 m Pct < 76mm 84.8 0-5 1.4 13.8 0.1a 0.la 0.1a 1.1b Tr.a 40.4 0.3 -14.9 5-8 AŽ 1.2 83.9 Tr.a O.la Tr.a 0.18 1.06 42.5 38.2 41.4 43.5 39.1 0.2 8-13 **B**1 1.3 79.7 19.0 Tr.a 0.24 0.28 0.8a 41.5 41.8 Q.5 0.3 Tr. 0.3a 0.4a 0.3a 0.4a 13-23 B2 1.9 75.9 22.2 Tr.a 0.5a 0.8a 34.1 1.1 0.4 34.8 32.1 38.9 40.9 75.3 68.7 1.0a 1.0a 22.1 23-29 B'2-A'2 2.6 O.la 0.7a 33.4 41.9 1.6 1.0 29.3 23.4 0.5a. 29-41 B'21 2.0 Tr.a 0.38 0.2a 30.8 37.4 37.4 40.9 1.0 9.2 37.5 39.7 41-54 B122 1.7 74.9 O.la 0.1a 1.1a 0.6 7.0 -54-64 80.6 18.2 B'3 Tr.a 0.1a 1.18 0.1 \_ -3.7 83.8 40.1 39.8 64-75 15.1 14.6 Tr.a 1.1b 0.8c 43.7 44.8 40.6 C 1.1 75-85 0.8 C Tr.a 2.1 -Tr. 6Ala Water Content Bulk density 4 DL 14**A1**5 4Ala 4Alc 4B4 4B3 4B15 4B2 4C1 8Cla COLE Depth Nitrogen C/N Field-Air-Field-1/3 min 148 15 (in.) carbon as CaCO (1:1) State State BO-Cm. Dry ₫ Bar Pct Pct Pct. 1.38 1.32 1.35 1.38 1.34 1.37 1.40 1.38 1.42 0-5 5-8 8**-**13 0.95 0.099 30 10.4 23.3 5.2 5.3 5.4 0.007 20.1 1.37 0.081 0.007 13.5 0.010 18.3 21.0 21.0 5.4 0.21 0.29 26.9 0.043 7.2 8.9 0.010 22.5 0.21 13-23 0.12 1.46 0.014 21.9 26.8 24.8 0.22 23-29 0.08 10.3 13.8 25.9 4.9 28.6 0.04 29-41 1.52 1.46 1.61 0.032 24.2 27.7 29.7 28.8 0.20 4.7 1.50 1.45 1.56 1.51 1.42 1.54 1.52 1.43 1.54 41-54 26.0 31.0 31.0 0.04 12.2 0.25 54-64 0.03 0.028 25.8 9.8 0.27 5.7 6.4 64-75 75-85 0.06 0.024 26.1 28.1 8.8 0.26 0.06 27.3 8.3 6.6 Extractable bases 6ELa Cat. Exch. 601ъ



Cap.

OationsRHi, OAc

KC1-

Exct.

A1

Ext.

Acidity Sum

Soil Type: Hosmer silt loam Soil Nos.: 962111-44-2

Location: Johnson County, Illinois, Tl35, R2E, Sec. 32, NE 160, SE 40, starting at the only tree near barnyard 128 steps west along fence and 49 steps north between the heads of two small gullies or draws.

Farent Material: Deep loess over limestone.

Physiography: Upland sideslope. Drainage Class: Moderately well.

Sampled by: R. B. Grossman and G. S. Holmgren, May 24, 1962.
Described by: G. O. Walker, J. B. Fehrenbacher, C. C. Miles and W. D. Farks.

Horizon and Idecoln Lab. No.

0 to 5 inches. Dark grayish brown (10YR 4/2) silt loem; weak fine crumb structure; friable; many roots; Ар 16963 pH 6.0; abrupt smooth boundary.

5 to 8 inches. Brown (10YR 4/3) and dark yellowish brown (10YR 4/4) silt loam; weak medium platy structure; friable; many roots; pH 5.4; abrupt smooth boundary. 16964

8 to 13 inches. Brown (10YR 4/3) and dark yellowish brown (10YR 4/4) heavy silt loam to light silty clay loam; weak fine and medium subangular blocky structure; slightly firm; few brown (10YR 4/3) worm casts and few very dark gray (10YR 3/1) Fe and Mn concretions; pH 5.4; abrupt smooth boundary. 16965

13 to 23 inches. Dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) light silty clay loam with common medium distinct pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; firm; thin pale brown (10YR 6/3) coatings, few black (10YR 2/1) stains from Fe and Mn concretions; pH 5.2; 16966 clear smooth boundary.

B'2-A'2 23 to 29 inches. Mottled dark yellowish brown (10YR 4/4) and light gray (10YR 7/2) heavy silt loam to light silty clay loam; moderate fine subangular and angular blocky structure; firm; peds when moist are 16967 8/2) silt; few black (10YR 2/1) Fe and Mn concretions; pH 4.9; clear wavy boundary.

29 to 41 inches. Dark yellowish brown (10YR 4/4) silty clay loam with common medium and coarse faint yellowish brown (10YR 5/6) and many medium distinct light brownish gray (10YR 6/2) mottles; moderate medium angular blocky structure; firm; strongly fragile; thin to medium pale brown (10YR 6/3) clay films on surface of peds; scattered black (10YR 2/1) Fe and Mn concretions; pH 4.6; abrupt smooth boundary. B'21 16968

41 to 54 inches. Dark yellowish brown (10YR 4/4) and brown (10YR 4/3) light silty clay loam with common medium distinct light gray (10YR 7/2) and light brownish gray (10YR 6/2) and common medium faint yellowish brown (10YR 5/8) mottles; weak coarse primmatic structure breaking to weak medium angular blocky structure; firm; thin pale brown (10YR 6/3) clay films on surface of peds, many very dark grayish brown (10YR 3/2) Fe and Mn smears; pH 4.8; clear smooth boundary. B' 22 16969

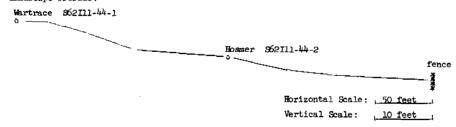
54 to 64 inches. Dark yellowish brown (10YR 4/4) heavy silt losm with common medium distinct light gray (10YR 7/2) and few fine faint yellowish brown (10YR 5/6) mottles; weak coarse prismatic structure; firm; thin dark brown (7.5YR 4/4) clay films on the surface of the peds, few very dark grayish brown (10YR 3/2) B' 3 16970 Fe and Mn stains; pH 6.5; gradual smooth boundary.

64 to 75 inches. Dark yellowish brown (10YR 4/4) silt loam with common medium distinct light gray (10YR 16971 7/2) and common fine distinct strong brown (7.5YR 5/6) mottles; very weak coarse prismatic structure to massive; slightly firm; few worm channels filled with dark brown (7.5YR 4/4) silt and few very dark grayish brown (10YR 3/2) We and Mn concretions; pH 7.0; arbitrary boundary.

16972 75 to 85 inches. Same as above horizon.

Remarks: Gray streaks 1/2 to 1 inch thick occur throughout the fragipan part of the profile. These streaks in general are vertical. They are 6 to 12 inches apart in the pit wall. Some lie in all directions. They are somewhat heavier in texture than the surrounding soil. The C horizon is highly compacted and slightly fragile.

Landscape Profile:



SOIL Hosmer silt losm

SOIL Nos. 850111-51-3 LOCATION Lawrence County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland and Lincoln, Nebraska

\_\_ LAB. Nos. \_\_\_501309-501311, 13 and 5542-5544

		1B1b							ss and parti			1		· · · · · ·				
		<b>—</b> —	Total	,	<del>                                     </del>	_	· · · ·	Sand	1	Si	lt .				382	_	rse fragme	nts 3BI
Depth (in.)	Horizon	Sand (2-0.05)	Silt (0.05– 0.002)	Clay ( < 0.002	Very coarse (2-1)		Medium (0.5-0.25) t. of << 2	1	Very fine (0.1–0.05)	0.05-0.02	int. III (0.02– 0.002)	Int. <u>II</u> (0.2–0.02)	(2-0.1)		Cm	2A2 >= 2 Pct.		19-76 t. of
0-9 9-15 15-23	Al A2 Bl		86.0 78.1 72.2	11.7 20.6 26.4	0.1	0.2 0.1 0.1	0.4	0.7	0.9 0.6 0.7		46.8 46.6 40.8	40.5 32.3 32.4				-		
23-26 26-35	B2m2 B2m2	b	71.4 75.0	26.4 23.3 20.6	0.1	0.4	0.3	0.5	0.9		38.5 40.1	34.1 35.8				=	ļ	
<u>35-50</u> 50-65	B3m1 C	ъ	76.8 67.3	18.6	0.6	0.3 1.3	2.0	4.1	6.1		43.6 35.9	34.8 39.8				-		
	6Ala							Bulk densil	y.	401	W	ater conte	nt		4C1		ρН	
Depth (In.)	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext. iron . as Fe		4Ale ⅓s bar	4A1h Oven dry	COLE	4Bla 1/10 bar	4B1c ⅓ bar	482 15 bar		WRD		8C1c (1:1)	8C1a (1:1)
	Pct.	Pct.			Pct.	Pct,	g/cc	g/cc	g/cc	i	Pet.	Pct.	Pct.		in/in		KÇI	H <sub>2</sub> 0
0-9 9-15 15-23	0.63 0.25 0.12				1,000	,,,,,,	8,00	2,00	8,00			7 01.	T ut.					5.4 4.6 4.6
23-26 26-35 35-50	0.21 0.09 0.03											29.5 30.3	11.3 10.6					4.8 4.9 4.6
50-65	0.07											24.8	7.5					5.9
		Extractal	ole bases :	IR12		(m)		EC	6G1d				atios to cla		803		Base sat	uration
	0003					6Ща	· "		0010				atios to cie	,	1 353			
Depth (In.)	6N2d Ça	602b	6P2a Na	6Q2a K	Sum meg/100 g	Ext. acidity	5A3a Sum cations	5Ala NH <sub>1</sub> OAc	Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum cations Pct.	5C1 NH <sub>4</sub> QAc Pct.
0-9 9 <b>-</b> 15	2.0	1.1	Tr.	0.3	176d/100 8	6.4 9.0	9.8 13.6				•	·					35 34	100
15-23 23-26 26-35	3.1 3.2 2.7	3.9 4.4 4.6	0.1 0.1 0.1	0.3 0.3		12.3 10.1 10.1	19.7 18.1 17.8	14.8 14.8							0.7		38 44 43	54 52
35-50 50-65	4.8 4.4	5.9 5.6	0.2	0.2		7.0 3.3	19.1 13.7	11.1							0.8		76	94
	<u> </u>			Clay Fract	ion Analysi	s 7Alb·d			T									
Depth (In.)	Mt.	Chl.	Vm. 7A		int,	Qtz.	KI.	Gibbsite							64-54- V	_ w		
	c		X re	, ————————————————————————————————————	<u> </u>	-	7/	A3				int. = ir	nterstratifie	d layer, Qt	chlorite, Vr z. — quartz, t determines	Ki. = Kaol	inite	
				-	├ ····· <del>-</del>   							tr. = tra	ce, x = sm	all, xx = m	oderate, xxx	x = abunda	nt, xxxx =	dominant
				<del> </del>								26 8.0	-35 an alyzed	d 50-6	5 inch se Soil	depth Surve	s vere y Lab	rato
					_							55 de	43 and pths.	5544	refer ir ligh	to the	respe	ective
	1	<u> </u>		<u> </u>	<u> </u>		<u>l</u>	<u>.                                    </u>	L			i) 88	ron-ma nd fre	ngenes ctions	ie?) oc	cur th	rough	rut t

the clay to be dominantly montmorillonite with lesser amounts of illite and some kaolinite.

C. X-ray analyses on the B horizon showed

Soil Type: Hosmer silt loam

Soil No.: S50III-51-3 Location: Lawrence County, Illinois. T3N-R12W, Sec. 2, NW 160, NW 40, SW 10 acres. Vegetation and land use: Hardwood forest, and Canadian bluegrass.

Slope and land form: 4 percent to southeast, upland site.

Drainage: Moderately well drained.

Erosion: None

Parent Material: Loess.

Sampled by and date: J. B. Fehrenbacher and A. A. Klingebiel. June 8, 1950.

Horizon and Beltsville and Lincoln Lab No.

501309

0 to 9 inches. Brown (10YR 5/3) to dark grayish brown (10YR 4/2) friable silt loam with weak fine crumb structure. Abrupt, smooth boundary; pH 5.4; bulk density 1.31.

A2 501310 9 to 15 inches. Yellowish brown to light yellowish brown (10YR 5.5/4) friable silt loam with weak, medium platy structure: clear, smooth boundary: pH 4.6: bulk density 1.37.

23 to 26 inches. Yellowish brown (10YR 5/6) with pale brown (10YR 6/3) coatings and seams, B2ml LSL 5542<sup>6</sup> firm, coarse silty clay loam; coatings are (10YR 7/2) dry; clear, smooth boundary; pH of

SCS-421 10-64

SOIL Hosmer silt loam

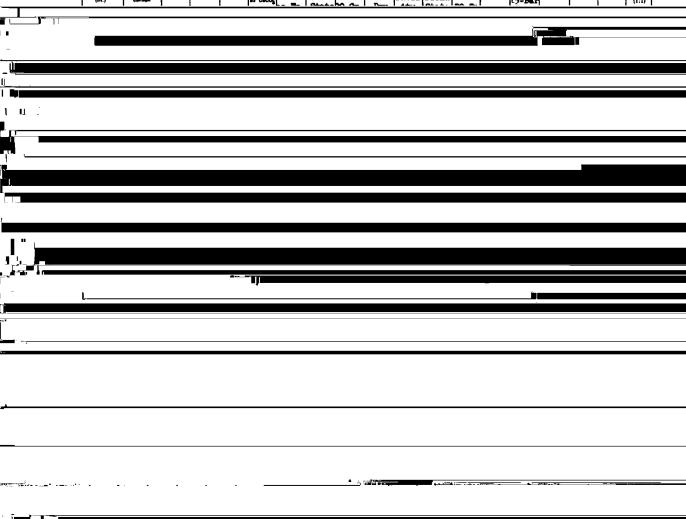
SOIL Nos. 859II1-59-1 LOCATION Macoupin County, Illinois

January 1965

SOIL SURVEY LABORATORY Lincoln, Nebraska

LAB. Nos. 12294-12304

		1.B							s and parti			A)					4	
			Total					Sand		Şif	t				l	Lion	rse fragme	HITS A
Depth (in.)	Horizon	Sand (2-0.05)	Sitt (0.05- 0.002)	Clay ( < 0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	(0.02- (0.002)	Int. 11 (0.2-0.02)	(2-0.1)			<b>&gt;−</b> 2	2 - 19 Pc	19-1
		_	V.VD27	 <del> </del>		Pci	. of << 2	, MM	'	•	0.002,					Pct.	-	76mm
0-4	A1,	2.4	82.5	15.1	0.3a	0.3a	0.3a	0.6a	0.9a	32.4	50.1	33.6	1.5				-	1
4-8	A2	1.9	83.3	14.8	-	0.24	0.3a	0.5a	0.9a	33.3	50.0	34.4	1.0		-	-	-	1
8-11	K1	1.8	81.5	16.7	O.la		0.34	0.44	0.8a	30.4	51.1	31.4	1.0			<u>-</u>		<b>.</b>
11-17	B21	1.6	77.0	21.4	-	0.15	0.26	0.4c	0.9c	29.3	47.7	30.4	0.7		- 1	-	-	Ì
17-22	R22	1.3	71.9	26.8	-	0.1ъ	0.26	0.4c	0.6c	25.7	46.2	26.5	0.7	i l		-	-	ł
	B23& A'2	1.2	71.8	27.0		0.1ъ	0.26	0.4c	0.5c	24.9	46.9	25.6	0.7				-	↓
	Y5 # BGT	1.2	68.8	30.0	-	0.1ъ	0.1ъ	0.4c	0.6c	27.8	41.0	28.6	0.6	1 1		-	-	1
29-39	3122	1.4	65.0	33.6	-	0.1ъ	0.2c	0.4c	0.7c	26.1	38.9	27.0	0.7			-	-	1
39-50	B'23	1.4	71.9	26.7	-	0.1ъ	0.2ъ	0.4c	0.7c	29.6	42.3	30.5	0.7			-	<u> </u>	<u> </u>
	B' 31m	2.5	75.4	22.1	-	0.26	0.4a	0.8	1.la	35.1	40.3	36.6	1.4	1 <sup></sup> T		-	I -	
62-70+	TTB' 32m	8.4	72.3	19.3	0.la	1.2a	1.8a	3.3a	2.04	36.9	35.4	40.4	6.4		1	-	-	1
	6Ala	6Bla				6Cla		Sulk densit	y	4D1	V	Vater conte	nî	<del>'                                    </del>			pH	
Depth	Organic	Nitroges	C/N		Çerbonate	Bot.	4Ala	4Alc	4Alh	Exten	434	4 <b>B</b> 3		4392				8c.
(M.)	cerben	- Annagem	· '''		as CaCO <sub>k</sub>	Iron	Field	ļ.	Oven-	sibil	Field	-	i	15-Bar			1	a:



Soil type: Hosmer silt loam S59I11-59-1 Soil Nos.:

Location: Macoupin County, Illinois; Tlln, R7W, Sec. 3, SW160, NW40, NW10, SW2, 224 yards north and 47 yards east (from road center) of southwest corner of NW40.

Woodland, mostly white and black oaks, with 3- to 8-inch d.b.h. predominant in numbers but with 12- to

18-inch d.b.h. fairly common. Ground cover includes sparse grass in small clumps.

Slope, land form, and parent material: Very gently convex slope of 3 percent gradient to northwest; near edge of a broad, gently sloping ridge top in the dissected, loess-mantled Illinoian drift plain. Iocal relief between the ridges and adjacent streams about 40 to 50 feet; slope breaks to about 25 percent gradient about 20 yards east of sampling site. Loss about 5 feet thick overlying medium textured Illinoian drift or drift-derived material. Described and sampled by: F. J. Carlisle, R. B. Grossman, J. B. Fehrenbacher, C. E. Downey, and G. O. Walker,

October 28, 1959. Horizon and

Lincoln Lab. No.

Recent leaf fall about 3 inches thick.

0 to 4 inches. LOYR 3/2 silt loam; moderate medium and fine granular structure; very friable; slightly sticky 12294 when wet; many fine fibrous roots; pH 6.0; abrupt boundary.

4 to 8 inches. 10YR 4/3 to 4/2 silt loam; massive but breaks to very weak thin plates; friable; slightly sticky when wet; common fine and common medium tubular pores; many roots; pH 4.8; clear boundary. 12295

8 to 11 inches. 10YR 4/4 to 4/3 medium silt loam; very weak subangular blocky; friable; common fine and 12296 medium tubular pores; numerous faint patches of blanched silt about 1-mm. across; many roots; includes small spots of material like A2; pH 4.8; clear boundary.

11 to 17 inches. 7.5YR 4/4 heavy silt loam or light silty clay loam; weak fine and medium subangular blocky; B21 friable; few thin patches of clay films 1- to 2-mm. across in some ped interiors; thin discontinuous blanched 12297 silt coatings on peds are 10YR 6/3, moist; very porous with many medium and fine tubular pores and some very irregular pores suggesting aggregation of very fine granules; roots common; pH 5.0; clear boundary.

17 to 22 inches. 7.5YR 4/4 light silty clay loam; compound moderate medium, approaching coarse, and fine subangular blocky; friable; very thin discontinuous blanched silt patches, 10YR 4/4 to 5/4 moist, gray dry, occur predominantly on larger ped surfaces; thin patches of brown clay films occur mostly in ped interiors; intra-B22 12298 ped porosity is variable with some peds having common medium and fine tubular pores and other few medium and fine pores; roots common; pH 5.2; clear boundary.

22 to 26 inches. LOYR 5/4 silty clay loam, est. 32 percent clay; moderate fine and medium subangular blocky; slightly firm; blanched silt coats on peds 10YR 6/3 moist, 10YR 8/2 dry; form continuous network in lower part of horizon but are discontinuous in upper part; few thin 7.5YR 4/4 clay films; intraped tubular pores B23 and A'2 quite variable in size and number from ped to ped but horizons 6 and 7 seem to have fewer than horizons above and below; interped pore space appears to be maximum in horizons 6 and 7 and is distinctly higher than in 12299 horizons below; pH 5.2; abrupt wavy boundary.

26 to 29 inches. 7.5YR 4/4 silty clay loam, est. 30 percent clay; compound strong medium and fine angular blocky; firm; few fine distinct 10YR 6/2 mottles; 2.5Y 6/2 moist, 8/2 to 9/2 dry, blanched silt forms a con-A'2 and B'21 tinuous network throughout horizon as coatings about 1-mm. or less in thickness on medium blocky peds; distinct

10YR 4/2 to 7.5YR 4/4 clay films on ped faces not coated with blanched silt and in ped interiors; conspicu-12300 ous number of roots about 1-cm. oriented horizontally in horizon; pH 5.0; abrupt irregular boundary.

29 to 39 inches. Faintly variegated LOYR 4/2 to 3/3 to 7.5YR 3/4 medium silty clay loam, est. 33 percent clay; B'22 12301 compound moderate medium prismatic and medium to fine angular blocky; very firm at moisture content well below field capacity; distinct continuous clay films on ped surfaces; interiors 10YR 5/4 with common fine distinct 10YR 6/2 mottles; blanched silt patches 1-mm. thick and about 1-cm. across are common prism faces and occur in small spots about 2-mm. across in ped interiors; common fine tubular pores in ped interiors but few open through vertical clay films; roots few but more than in B'23; pH 4.7; gradual boundary.

B'23 39 to 50 inches. 10YR 5/6 light silty clay loam slightly more clayey than B'3lm; many fine distinct 10YR 6/2 mottles; compound moderate coarse prismatic and moderate medium to coarse angular blocky; very firm, not brittle, at moisture content well below field capacity; distinct 7.5YR 4/4 clay films are continuous on sur-12302 faces of peds; 10YR 7/1 blanched silt patches 1-mm. thick and about 5-mm. across evident on many surfaces; common fine tubular pores in ped interiors but sparse to few opening through vertical clay film surfaces; pH 4.8; gradual boundary.

B' 31m 50 to 62 inches. Distinctly mottled lOYR 6/2 and lOYR 5/6 to 5/8 (about 50/50) light silty clay loam, est. 28 percent clay; weak very coarse blocky or prismatic; very firm to extremely firm; distinct and nearly continuous 7.5YR 3/4 to 4/4 clay films on structural units; common fine tubular pores lined with brown clay 12303 films and/or black exide accumulation: black exide in filamentous (dendritic) rettern on prism faces or

fine roots present in interped pore spaces only; prominent white spots 2- to 3-mm. across and having appearance of partially melted fine sugar occur in small groups, probably organic; pH 5.6; clear boundary.

IIB'32m 62 to 70 inches plus. 10YR 3.5/4 slightly gritty silty loam with many fine faint 10YR 4/2 mottles; massive 12304 with numerous very fine horizontal pores apparently lined with clay films suggesting very weak thin platy; extremely firm and brittle at moisture content well below field capacity but definitely moist; occasional roughly planar surfaces with patchy dark brown clay films and fine black oxide coating; common fine and occasional medium tubular pores lined with brown clay films and/or dark oxides; some medium tubular pores have a 10YR 5/2 (blanched?) zone 1- to 2-mm. thick around them; few fine roots occur only on clay-coated planes and in occasional clay and oxide-lined medium tubular pores; pH 6.0.

Remarks: Horizons 6 and 7 form a distinct grayish layer in the profile. Colors are of fully moist soil unless indicated otherwise. pH is by Hellige-Truog field pH kit. Description of pores in this profile and profile 859111-68-2, Hosmer silt loam, follows Johnson, W. M., et al. 1960 Soil Science 89:319. Elanched silt in this profile and profile S59II1-68-2, Hosmer silt loam, refers to silt grains that lack black or colored coatings. When moist the larger grains appear transparent or translucent; when dry, translucent or opaque. Grains appear to lack any coating is gray or white. If blanched silt lawer is very thin, it transmits light from the underlying material when fully

SOIL Hosmer silt loam

SOIL Nos. S59II1-68-2 LOCATION Montgomery County, Illinois

SOIL SURVEY LABORATORY Lincoln, Mehraska

LAB. Nos. 12283-12293

January 1965

		1B1							s and parte	te diamete		3A1						
			Total		L.,	<u> </u>		Sand		Sil	t					Coa	rse fragme	nts 2A2
Depth	Horizon	Sand	Ssit	Clay	Very coarse	Coarse	Medium	fine	Vary fine		Int. III	let, 🎞				<b>&gt;=</b> 2	2 - 19	19 - 76
(ln,)		(2-0.05)	(0.05- 0 <b>0</b> 02)	( < 0.602)	(2-1)			(0.25-0.1)	(0.1–0.05) 	0.05-0.02	0.002)	(0.20.02)	(2-0.1)			0-4		1. of
		-	90 5	15.0		0.4a	. of << 2		1 0			20.6	7 -			Pct.	ļ	Gmm T
0-1 1-6	AJ A2	2.5	82.5 82.4	15.0 15.4	-	0.4a	0.4a 0.4a	0.7a 0.7a	1.0b 9.8b	31.3 30.3	51.2 52.1	32.6 31.4	1.5			-	-	1
6-11	B1	2.0	77-9	20.1		0.3c	0.3e	0.6e	0.7b	28.9	49.0	29.9	1.3				<u> </u>	
11-17	B21	1.5	71.0	27.5	-	0.2e	0.2c	0.40	0.7b	24.4	46.6	25.3	0.8			-	-	
1.7-23	322	1.2	66.2	32.6	-	0.10	0.2c	0.4c	0.5e	22.6	43.6	23.3	0.7			-	-	
23-28 28-33	B23&A'2 A'2&B'21	1.2	65.7 64.8		0.la	0.2c	0.1c	0.30	0.5c 0.3c	21.4 22.8	44.3 42.0	22.1 23.3	0.7	ļ		- <del>-</del>	∤ <u></u> .	-
20-33 33-41	E-55	1.4	61.8	36.8		0.1c	0.20	0.40	0.7c	20.5	41.3	21.4	0.7	İ		_	_	1
41-50	P13lm	1.4	69.5	29.1	_	0.10	0.20	0.5c	0.6e	23.6	45.9	24.5	0.8			-	-	İ
50-60	B'32m	2.7	73.7	23.6		0.36	0.56	0.96	0.96	28.4	45.3	29.7	1.8				-	1
60-68+	IIE,332w	15.5	67.5	17.0	0.2a	2.5a	4.1a	6.0	2.7	31.5	36.0	36.8	12.8			-	-	
	6Ala	6Bla			<b>!</b>	6Cla		Bulk densit	y	4D1		Wat	er Con	tent			рH	A
Depth	Organic	Nitrogen	C/N		Carbonate		4Ala		4Alh	Exten-	4 <u>18</u> 4	4B3	4ВЛ.ь	4B2	4C1			8Cla
(ln.)	carbon				as CaCO <sub>3</sub>		Field-	1	Oven-		Field-				1/3- to			a b
	<u>a</u>				1	Iron	State	30~Cm.	ргу	ity	State	30-Cm	Pieces	Steve				Tr. O
	Pct.	Pct.			Pct.	Pet.	g/cc	g/cc	g/cc	in.per horizor	Pct.	Pct.	Pct.	Pct.	in per horizon		[	H20
0-1	4.88	0.274	18			0.7			B1,	,,0112				9.3			•	6.2
1-6	1.22	0.087	14			0.8	1.36	1.34 1.36	1.37	0.04	10.0	23.7	23.0 21.8	6.5	1.1			4.7
6-11	0.44	0.040	9		<b> </b>	0.9	1.36 1.39	1.36	1.40	0.05	9.4	23.7		7.9	1.0	ļ	<u> </u>	14.8
11-17		0.043	8 8	1		1.3	1.46	1.42 1.45e	1.49	0.10	12.2 8.5	21.1 22.9e	24.1 25.2	11.2	1.1			4.6
17-23 23-28		0.034	8	ļ		1.4	1.22	1.496	1.50	0.14	0.9	22.98	27.2	14.9	1.0			4.4
28-33	0.28	010.74				1.3								15.1			†	4.3
33-41	0.26		ŀ	i		1.1	1.63	1.40e		0.42	9.2	25.9e		16.9	1.2			4.2
41-50 50-60	0.21				ļ,	$\frac{1.1}{1.1}$	1.56	1.40 1.38e	1.56	0.44	6.4 5.5	29.8 27.5e	29.9 27.4	14.0 11.6	5.0		<del> </del> -	4.4
60-68-	0.17		1			1.0	1.70	1.60e		0.14	2.2	20.6e	23.7	8.0	2.0			5.0
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(in.)	Ca	Mg	Na	К	Sum	Acidity	5A3a Sum	5Ala NH <sub>1</sub> OAc	Ext.						Ca/Mc			·
	-4			К	meg/100 g	Acidity	5A3a Sum Cations	5Ala NH <sub>L</sub> OAc									Sum Cattions Pet.	<b>INTO</b> LOF
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0-1 1-6	15.L 1.9	2.6 1.4	Tr.	0.4 0.3	meg/100 g   18,4   3.6	Acidity 8.6 10.2	5A3a Sum Cations 27.0 13.8	5Ala NH <sub>4</sub> OAc 19.4 8.9	Ext.						5.9 1.4		Sum Oattions Pct. 68 26	Pct. 95 140 38
0-1	15.L	2.6	<u>T</u> 7.	К О, 4	   meg/100 g   18,4	8.6 10.2 9.5	5A3a Sum Cattions 27.0	5Ala NH <sub>4</sub> OAc	Ext. Al - 2 3 6						5.9		Sum Oatdons Pct. 68 26 27 28	Pct. 95 40 38
0-1 1-6 6-11 11-17 17-23	15.1 1.9 1.6 1.2 1.2	2.6 1.4 1.6 3.6 5.2	Tr. Tr. Tr. Tr. O.1	0,4 0.3 0.3 0.3	meg/100 g 18,4 3.6 3.5 5.1 6.8	8.6 10.2 9.5 12.8 16.8	5A3a Sum Cations 27.0 13.8 13.0 17.9 23.6	5Ala NH <sub>4</sub> OAc 19.4 8.9 9.2 13.4 18.0	Ext. Al - 2 3 6 8						5.0 1.4 1.0 0.3 0.2		Sum Oatdons Pct. 68 26 27 28	Pet. 95 40 38 38 38
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0-1 1-6 6-11 11-17 17-23 23-28 28-33	15.1 1.9 1.6 1.2 1.2 1.6	2.6 1.4 1.6 3.6 5.2 6.5 7.2	Tr. Tr. Tr. Tr. 0.1 0.1	0,4 0.3 0.3 0.3 0.4 0.4	meg/100 g 18, 4 3.6 3.5 5.1 6.8 8.6	8.6 10.2 9.5 12.8 16.8 18.2	5A3a Sum Cations 27.0 13.8 13.0 17.9 23.6 26.8 27.9	5Ala NH <sub>4</sub> OAc 19.4 8.9 9.2 13.4 18.0 20.3	Ext. Al. 2 3 6 8 9 8						5.9 1.4 1.0 0.3 0.2 0.2		Stum Oatdons  Pet. 68 26 27 28 29 32	Pet. 95 40 38 38 42 48
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0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50 50-60	15.1 1.9 1.6 1.2 1.2 1.6 2.7 3.2 3.6	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3	Tr. Tr. Tr. O.1 O.1 O.3 O.4	0,4 0.3 0.3 0.3 0.4 0.4 0.5 0.4	meg/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2	8.6 10.2 9.5 12.8 16.8 18.2 17.5 17.3 14.0	5A3a Sum Cations 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.3 22.1	5Ale NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8	Ext. Al 2 3 6 8 9 5 3						5.4 1.0 0.3 0.2 0.4 0.3 0.4		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50	15.4 1.9 1.6 1.2 1.2 1.6 2.7 3.2 3.2	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3	Tr. Tr. Tr. 0.1 0.1 0.3 0.4	0,4 0.3 0.3 0.3 0.4 0.4 0.4	meg/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.5 17.3	5A3a Sum Cattons 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.3	5Ala NH4OAd 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7	Ext. Al 2 3 6 8 9 8 9 5						5.0 1.4 1.0 0.3 0.2 0.4 0.3		Sum Cattlons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 42 48 53 62
0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50 50-60	15.1 1.9 1.6 1.2 1.2 1.6 2.7 3.2 3.6	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4	Tr. Tr. Tr. O.1 O.1 O.3 O.4	0,4 0.3 0.3 0.3 0.4 0.4 0.5 0.4	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 17.5 17.3 14.0 10.0 5.8	5A3a Sum Cattins 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.3 22.1 15.3	5Ale NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8	Ext. Al - 2 3 6 8 9 8 9 5 3 1	3.					5.4 1.0 0.3 0.2 0.4 0.3 0.4		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
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0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50 50-60	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4	Tr. Tr. Tr. 0.1 0.1 0.3 0.4 0.5	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.5 14.0 5.8	5A3a Sum Cattirus 27.0 13.8 13.0 17.9 23.6 26.2 26.3 27.9 30.5 26.2 22.1 15.3	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7	Ext. Al  2 3 6 8 9 8 9 5 3 1 notule	:					5.4 1.0 0.3 0.2 0.4 0.3 0.4		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50 50-60 60-68+	15.11 1.9 1.6 1.2 1.2 1.6 2.7 3.2 3.2 3.6 3.4	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4	Tr. Tr. Tr. 0.1 0.1 0.3 0.4 0.5	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ഷൻ ന്	gdgo	thed to	3()-(**)	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23 23-28 28-33 23-41 41-50 50-60 60-68+	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4	Tr. Tr. Tr. 0.1 0.1 0.3 0.4 0.5	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed to	30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23 23-28 28-33 33-41 50-60 60-68+	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Pettor	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4 +0 C2	Tr. Tr. Tr. 0.1 0.3 0.4 0.5 0.5	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed, tic	30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 17-17 17-23-28 28-33 23-41-50 50-60 60-68+	15.11 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Potton	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4 +0 C1 fact. Iron	Tr. Tr. Tr. 10.1 0.1 0.3 0.4 0.5 0.5 15-Bar fater 0.62 0.42	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adson	rbed, tx	) 30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pct. 95 40 38 38 42 48 53 62 4
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0-1 1-6 6-11 11-17 17-23-28 23-28 23-41 41-50 50-60 60-68+ 0-1 1-6 6-11 11-17 17-23 23-28	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Potton 1.29 0.58 0.46 0.46 0.59 0.61	2.6 1.4 1.6 3.5 7.2 9.2 9.2 8.3 7.6 5.4 to C1 fact. Iron 0.05 0.04 0.04	Tr. Tr. Tr. Tr. 0.1 0.1 0.3 0.4 0.5 0.5 0.5 0.62 0.42 0.39 0.41 0.45	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adson	rbed, to	) 30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pct. 95 40 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23-28 23-28 23-31 41-5 50-60 60-68+ 0-1 1-6 6-11 11-17 17-23 23-28 23-28	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Pottor MF4.OAc COM 0.56 0.46 0.49 0.56 0.63	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4 +0 C1 fact. Iron 0.05 0.04 0.04 0.04	Tr. Tr. Tr. 0.1 0.3 0.4 0.5 0.5 0.5 0.62 0.42 0.42 0.41 0.41 0.415 0.41	0,4 0,3 0,3 0,3 0,4 0,4 0,5 0,4 0,2	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed, to	30-61	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 42 48 53 62 74
0-1 1-6 6-11 11-27 17-23 23-28 28-33 33-41 41-50 50-60 60-68+ 0-1 1-6 6-11 11-17 17-23 23-28 28-33 33-41	1.2 1.6 2.7 3.2 3.6 3.4 Potton 1.29 0.58 0.49 0.55 0.61 0.67	2.6 1.4 1.6 3.6 5.2 6.5 7.2 9.2 8.3 7.6 5.4 to 01 to 0.05 0.05 0.05 0.04 0.04	Tr. Tr. Tr. 0.1 0.1 0.3 0.4 0.5 0.5 0.5 1 Bar dater 0.62 0.42 0.30 0.41 0.45 0.46	0.4 0.3 0.3 0.3 0.4 0.4 0.5 0.4	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed to	) 30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 11-17 17-23-28 23-28 23-41 41-5 50-60 60-68+ 0-1 1-6 6-11 11-17 17-23-28 23-28 26-33	15.4 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Pottor MF4.OAc COM 0.56 0.46 0.49 0.56 0.63	2.6 1.4 1.6 3.6 5.2 6.5 7.2 8.3 7.6 5.4 to C1 fact. Iron 0.05 0.04 0.04 0.04 0.04 0.04	Tr. Tr. Tr. 0.1 0.3 0.4 0.5 0.5 0.5 0.62 0.42 0.42 0.42 0.41 0.445 0.446 0.46	0.4 0.3 0.3 0.3 0.4 0.4 0.5 0.4 0.5	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed, to	30-6	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pet. 95 40 38 38 38 42 48 53 62 74
0-1 1-6 6-11 17-17 17-23-28 28-33 23-41 11-50 60-68+ 0-1 1-6 6-11 11-17-23 23-28 28-33 33-41 11-50	15.11 1.9 1.6 1.2 1.6 2.7 3.2 3.6 3.4 Potto: Potto: 1.29 0.58 0.46 0.49 0.59 0.61 0.63 0.67 0.69	2.6 1.4 1.6 3.2 6.5 7.2 9.3 7.6 5.4 +0 C1 fact. Iron 0.05 0.04 0.04 0.04	Tr. Tr. Tr. 0.1 0.3 0.4 0.5 0.5 0.5 0.62 0.42 0.42 0.42 0.41 0.445 0.446 0.46	0.4 0.3 0.3 0.3 0.4 0.4 0.5 0.4 0.5	meq/100 g 18,4 3.6 3.5 5.1 6.8 8.6 10.4 13.2 12.3	8.6 10.2 9.5 12.8 16.8 18.2 17.3 14.0 5.8	5A3a Sum Cattims 27.0 13.8 13.0 17.9 23.6 26.8 27.9 30.5 26.2 22.1 15.3 5-50/6 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	5Ala NH4OAc 19.4 8.9 9.2 13.4 18.0 20.3 21.4 24.7 19.8 16.3 11.7 Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn Fe-Mn	Ext. Al  2 3 6 8 9 8 9 5 3 1 nodules odules 60 inc	hes.	ad of	adsor	rbed to	30-Cr	5.9 1.4 1.0 0.3 0.2 0.4 0.3 0.5 0.6		Sum Cattons Pet. 68 26 27 28 29 32 37 43 47	Pct. 95 40 38 38 42 48 53 62 4

Soil type: Hosmer silt loam

Soil Nos. : \$59111-68-2
Location: Montgomery County, Illinois; T9N, R5W, Sec. 13, southwest corner, 490 feet east and 122 feet north.
Vegetation: Woodland, many 12- to 18-inch d.b.h. oaks and thick understory of small oaks, hickory, and blackberry. Slope, land form and parent material: Very gently convex 3 percent slope to northwest; near edge of nearly level ridge top in the dissected loess-mantled Illinoian drift plain with 50-foot relief between ridge tops and adjacent stream; about 20 feet to northwest the slope grades to a side slope of 18 percent gradient; parent material is loss about 5 feet thick overlying medium textured Illinoian drift or drift-derived material.

Described and sampled by: F. J. Carlisle, R. B. Grossman, J. B. Fehrenbacher, C. E. Downey, and G. O. Walker, October 27, 1959.

Horizon and Lincoln Lab. No.

- Ŏ1 About 2 inches thick. A loose layer consisting of fine twigs, old leaf midribs and recent fallen leaves. About 1/4- to 1/2-inch thick. Very dark brown to black; soft, loose, heterogeneous, and somewhat fibrous 02 material with some fine granules (decomposing plant remains and numerous fecal pellets).
- O to 1 inch. 10YR 3/1 to 3/2 silt loam; moderate fine and medium granular; very friable; mixed with A2 12283 material in places; thickness ranges from 1 to 2 inches within several feet; many fine roots; clear boundary.
- 1 to 6 inches. 10YR 4/2 to 4/3 silt loam; massive, grading to weak subangular blocky in lower part; friable; 12284 less sticky and clayey than Bl: many fine and few medium tubular pores: krotovinas 1 to 2 inches in diameter. largely Al material, common; abundant roots; pH 5.8; clear boundary.
- 6 to 11 inches. 10YR 4/3 silt loam; weak fine and medium subangular blocky; many ped surfaces 10YR 3/3; 12285 friable; few fine patches of dark brown clay films; common to many fine tubular pores; roots abundant; pH 4.8; clear boundary.
- 11 to 17 inches. 10YR 4/4 light silty clay loam; weak to moderate medium subangular blocky; friable; dis-R21 12286 tinct fine patches of dark brown clay films on ped surfaces and in ped interiors; scattered blanched silt grains on natural surfaces are visible with hand lens but distinct patches of blanched silt not evident; many fine tubular pores; roots common throughout layer; clear boundary.
- 17 to 23 inches. 10YR 4/4 light silty clay loam; compound of fine angular within moderate medium subangular B22 blocks; friable to slightly firm; thin patches (1- to 3-mm. across) of brown clay films on most ped faces and in ped interiors; patches (1- to 3-mm. across) of blanched silt evident on surfaces of medium subangular 12287 blocky peds at low moisture contents, but faint when fully moist, 10VR 5/3 where thickest (<1-mm.); common fine to very fine and few medium tubular pores; roots common; pH 4.6; clear boundary.
- 23 to 28 inches. lOYR 4/4 light silty clay loam, strong medium, fine subangular blocky and angular blocky; **B**23 firm; blanched silt coatings (<1-mm. thick) on peds appear to form a continuous network although most individual peds not completely coated; fully moist blanched coatings are 10YR 5/3 where thin to 2.5Y 5/2 where thick, dry coatings 10YR 7/2 to 7/3; fine distinct patches of brown clay films (1- to 2-mm. across) evident and A'2 12288 in most ped interiors and on some ped faces; many ped interiors have fine blanched silt patches (1- to 2-mm. across); intraped tubular pores few to common; interped porosity appears higher than in horizons immediately above and below; roots common; pH 4.5; clear boundary.
- 28 to 33 inches. Mottled (fine faint pattern) 10YR 4/4 and 5/2 light silty clay loam; strong fine and medium A12 blocky with blocks being compounded into moderate medium prisms in places - mostly in lower part of horizon; and B'21 blocky peds firm with relatively dense interiors; friable and very porous areas (5- to 10-mm. across) which constitute about 15 percent of horizon are 10YR 5/2 and 5/3 moist, white dry, in fine faint pattern; 2.5Y 6/2 moist, 8/1 dry, blanched silt forms continuous network throughout horizon as coatings up to 1- or 2-mm. 12289 thick on surfaces of peds; all natural surfaces not coated with blanched silt have distinct clay films predominantly 10YR 4/3 to 3/4; firm and relatively dense peds seem to contain more clay than friable porous areas; interped porosity much higher than in any lower horizon; intraped porosity very variable; from few to common tubular pores in firm peds to common medium and many fine pores in friable areas; roots common and conspicuous proportion of roots >3-mm. are oriented horizontally; pH 4.4; clear irregular boundary.
- B'22 33 to 41 inches. Variegated pattern 10YR 4/2, 4/4, and 5/2 medium silty clay loam; strong medium and fine 12290 angular blocky compounded with medium prisms; firm; distinct continuous clay films on ped surfaces; many ped interiors mottled love 5/2 and 7.5 vm 4/4, some fine blocky peds appear clay-rich throughout and have same interior colors as on ped surfaces; patches of blanched silt up to 1-mm. thick and 1- to 2-cm. across are common on ped surfaces; thin blanched silt patches (1- to 2-mm. across) occur within some peds; fine tubular pores common in mottled ped interiors but tubular pores opening on clay film-coated vertical surfaces are rare and only few tubular pores open on horizontal ped surfaces; pH 4.5; clear boundary.
- B'31m 41 to 50 inches. Mottled (about 50/50 in a fine distinct pattern) 2.5Y 6/1 to 5/2 and lOYR 4/4 to 5/4 light 12291 silty clay loam; compound weak medium blocky and weak medium prismatic; prisms have uneven faces; very firm; distinct 10YR 4/3 to 3/4 clay films nearly continuous on ped faces and lining many common fine and few medium tubular pores; visible pores opening through clay films few, especially on vertical surfaces; spots of blanched silt (1- to 5-mm. across) are evident on ped surfaces and in ped interiors; roots few but not confined to interped spaces; pH 4.8; clear boundary.
- 50 to 60 inches. Mottled (about 50/50 in a fine distinct pattern) lOYR 5/2 and 4/4 to 5/4 heavy silt loam; B' 32m 12292 weak coarse and very coarse prismatic with prisms delineated by 1/4-inch thick silty clay loam planes which contain much gray silt and numerous brown clay films in continuous sheets and filamentous pattern; very firm to extremely firm at moisture content well below field capacity; also common very fine faint very dark brown and strong brown mottles; common fine and few medium tubular pores; when moist, distinct white spots (1- to 2-mm. across) and having very fine grainy and shiny (sugary) surfaces that occur in small groups, probably organic; roots observed only in planes between prisms; pH 4.5; clear boundary.
- IIB 33m 60 to 68 inches plus. 10YR 4/4 gritty silt loam with common medium distinct 10YR 4/2 to 5/2 mottles; massive with 1/4- to 3/4-inch thick vertical planes 4 to 10 inches apart; extremely firm and very difficult to dig with spade at field moisture well below field capacity; grayish brown mottles commonly associated with fine to medium tubular pores lined with dark brown clay films and/or very dark oxide accumulations; vertical planes, much less firm than adjacent mass, consist of 10YR 5/2 to 5/3 silt loam and dark brown clay films with many blanched silt patches; common fine and few medium tubular pores; very weak very thin platy, suggested by faint horizontal lineation due partly to some fine and very fine horizontal pores and associated numerous specks of blanched silt <-mm. across; fine roots common in vertical planes only; some roughly spherical voids filled with dark brown clay; pH 5.0.

Remarks: pH is by Hellige-Truog field pH kit. See remarks in description of profile S59Ill-59-1, Hosmer silt loam, concerning description of pores and blanched silt.

SOIL Hommer silt loam SOIL Nos. SA9III-77-1 LOCATION Pulaski County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5092 - 5097

	1	1816							s and parti			1		,				
		<u> </u>	Total		<u> </u>	,		Sand		Şil	t				382		rsa fragme	ents 3
Depth (fn.)	Horizon	Sand (2-0.05)	Silt (0.05→ 0.002)	Ctay ( < 0.002	Very coarse (2-1)	i	,	l	Very fine (0.1–0.05)	0.05-0.02	Int. III (0.02– 0.002)	Int, II (0.2–0.02)	(2-0.I)		Cm	2A2 -> 2	2 - 19	19- ct. of _
0-2	A1 8	<del> -</del>	<u> </u>				t. of -< 2	mm	<del></del>	7			=	<del></del>		Pct.	-	76mm
2-11 11-17	A2 A3/B1 a	2.0	82.6	15.4	0.1	0.2	0.2	0.3	1.2	42.8	39.8	14.2	0.8			_		
17- <b>22</b> 22-27 27-31	B2 B2 B2	1.6 1.5 1.8	74.0 72.7 72.2	24.4 25.8 26.0	-	0.2	0.2	0.3	0.9 0.9 1.0	35.8 35.6 34.9	38.2 37.1 37.3	36.9 36.6 36.1	0.7 0.6 0.8	1		=		
31-35 35-39	B2 •		74.6	24,1	-	-	0.1	0.3	0.9	38.3	36.3	39.4	0.4			-		
39 <u>-44</u> 44-52	CJ.	2.3	75.3	22.4	-	0.2	0.2	0.6	1.3	38.4	36.9	40.1	1,0	-		-		┞
	<del> </del>	<del> </del>	<u> </u>	<del>  -</del> -				Bulk densit	<u> </u>		<u> </u>	Vater conte	<u> </u>	<u> </u>			pH PH	<u></u>
Depth	6Ala Organic	Nitrogen	C/N	1	Carbonate	Ext. iron		4A1e	4A1h	4D1		481c	482	1	4C1		8Clc	80
(ln.)	carbon				as CaCO <sub>3</sub>	as Fe		35 bar	Oven dry	COLE		l≰ ber	15 bar		WRD		(1:1)	(1
	Pct.	Pct.			Pct.	Pct.	<b>g/</b> cc	g/cc	g/cc		Pct.	Pct.	Pct.	<u> </u>	in/in		KCI	Н.
0-2 2-11 11-17	0.68											ĺ						4
17-22 22-27 27-31	0.22 0.15 0.12																	4
31-35 35-39 39-11	0.07																	14
4-52	0.05															-		*
		Extractat	le bases S	Bla		бЮа	C	EC	6G1a			6	letios to cla	ay	8D3		Base sai	turati
Depth	6N2d	602b	6P2a	6Q2a		Ext.	L										5C3	5
(ln.)	Ca	Mg	Na	К	Sum	acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. iron	15-ber water	Ca/Mg		Sum cations Pct.	NH,
0-2 2-11	1.5	1.6	0.1	0.3	meq/100 g	7.8	11.4										31	<del>                                     </del>
11-17 17-22	2.1	3.9	0.1	0.4		10.8	17.3		<b>_</b>								37	╂-
22-27	2.8	4.6	0.1	0.3		12.1	19.9							<u> </u>			39	
27-31 31-35	3.4	4.7	0.1	0,3	├	12.6	21.1	<del> </del>	ļ			-		<del> </del> -			40	┝
35-39 39-44	4.3	5.4	0.3	0.3		10.5	20.8		L					ļ			50	L
14-52	5.9	6.5	0.6	0.3		8.0	21.3										62	
		<u> </u>		Clay Fract	ion Analysi	s 7Alb-d		·										
Depth (in.)	Mt.	Chi.	Vm.	Mi.	Int,	Qtz.	KI.	Gibbsite										
	-	1	7A2 —— X-13	<u>'</u>	 	   <u></u>	7.	  A3	ļ					nite, Ch). <del>-</del> nd layer, Qt				= mi
												Relative	e amounts:	blank = no nall, xx = m	determine	d, dash =	not detect	
														7866 OD				
		1	1	1	1	ı	L	i		ı								
			-	T					ļ									

Soil Type: Hosmer silt loam

Soil No.: 849Ill-77-1

Location: Pulaski County, Illinois. T. 158., R. 1 E., Sec. 16, NE 1/4, NE 40, SW 10, along S side of gravel road (Lafayette type gravel) in 10 ft. road cut, 105 ft. ESE of center of private road going S along W side of wood.

Vegetation and land use: Oak-hickory deciduous forest cover with undergrowth of dogwood and other small trees and shrubs.

Slope and land form: 8 1/2 percent to E.

Sampled by and date: J. B. Fehrenbacher, W. S. Ligon, R. T. Odell, G. D. Smith, P. T. Veale, H. L. Wascher and E. P. Whiteside. November 3, 1949.

Horizon and Beltsville Lab. No.

5096

Al 0 to 2 inches. Very dark grayish brown (10TR 3/2) friable silt loam, 1/16 to 1/8 inch crumb, many rotting leaves, roots up to 1/4 inch.

A2 2 to 11 inches. Dark yellowish brown (10YR 4/4) friable silt loam 1/16 to 1/2 inch 5092 irregular crumbs or fragments, moderate amounts of worm channels and roots up to 1/4 inch.

A3 or B1 11 to 17 inches. Yellowish brown (10TR 5/4) friable silt loam, 1/4 to 1/2 inch irregular fragments.

B2 17 to 22 inches. Yellowish brown (10TR 5/6) very slightly plastic heavy silt loam to light 5093 silty clay loam, 1/4 to 1/2 inch slightly rounded to blocky lightly coated light yellowish brown (10TR 6/4), few roots up to 1/8 inch and moderately numerous worm channels.

B2 22 to 27 inches. Horison same as above.

B2 27 to 31 inches. Yellowish brown (10TR 5/6) and pale brown (10TR 6/3), moderately compact 5095 heavy silt loam, 1/4 to 1/2 inch irregular aggregates, easily crushed, moderately heavy coated dry very pale brown (10TR 8/3), few iron-manganese concretions, brown (7.5TR 4/2), few roots and small worm channels.

B2 31 to 35 inches. Yellowish brown (10TR 5/8) and light yellowish brown (10TR 6/4) more compact than gray layer above, silty clay losm or light silty clay losm, 1/2 to 1-1/2 inch angular to rounded firm aggregates, coated dry very pale brown (10TR 8/3), thick on smaller aggregates but nearly absent on larger, occasional iron-manganese concretion, dark yellowish brown (10TR 4/4), few roots and few worm channels, occasional channel filled with gray silty material.

B2 35 to 39 inches. Same as horizon above.

B2 39 to 44 inches. Same as horizon above.

Cl 44 to 52 inches. (10YR 5/8) and (10YR 8/2) compact heavy silt loam, irregular fragments, few iron-manganese concretions (10YR 3/2), few roots in cracks or along aggregate faces, more worm channels than in layer above, gray silica flour fills some cracks and wormholes.

SOIL Bosmer silt loam SOIL Nos. Sugiti-91-1 LOCATION Union County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 5085 - 5091

Depth Horizon Sand Sift Clay very (Coarse   Medium   Fine   Very fine   Int. III   Int. II   (0.2-0.05) (0.05-0.002) (-0.002) (-0.002) (0.02-0.1) (0.5-0.25) (0.25-0.1) (0.1-0.05) (0.05-0.02) (0.02-0.02) (0.2-0.02) (0.2-0.02)	Coarse fragment 2A2 2 2 - 19 Pct 76
Depth (in.)   Horizon   (2-0.08)   (0.002)   (0.05)   (0.05)   (0.05)   (0.05)   (0.05-0.02)   (0.25-0.1)   (0.1-0.08)   (0.05-0.02)   (0.25-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.02)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-0.1)   (0.2-	Pct. Pct. Pct. Pct. Pct. Pct. Pct. Pct.
0-2 A1	Pct. < 76
6-10\$\frac{1}{2}\$ A22 \\ \begin{array}{c c c c c c c c c c c c c c c c c c c	
53-23   R21t   2.1   70.9   27.0   -   0.2   0.2   0.5   1.2   31.8   39.1   33.3   0.9   27-37   A   2   2.6   72.1   25.3   -   0.4   0.4   0.7   1.1   31.7   40.1   33.2   1.5   27-35   B   21x   2.9   73.7   23.4   -   0.4   0.4   0.7   1.1   33.5   40.2   35.2   1.5   42-50   B3x   3.1   71.8   25.1   -   0.4   0.4   0.8   1.5   33.1   38.7   35.0   1.6   50-60   C   2.0   78.3   19.7   -   0.1   0.2   0.5   1.2   36.7   41.6   38.2   0.8	
23-27 A '22	
27-35 B 22 x 2.9 73.7 23.4 - 0.4 0.4 0.8 1.5 33.1 40.2 35.2 1.5 42-50 B3x 3.1 71.8 25.1 - 0.4 0.4 0.8 1.5 33.1 38.7 35.0 1.6 50-60 C 2.0 78.3 19.7 - 0.1 0.2 0.5 1.2 36.7 41.6 38.2 0.8	PH 8Ctc (1:1)
SAla   Organic (In.)   Organic carbon   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pe	DH 8tlc (1:1)
Depth   Organic   C/N   Carbonate   Ext. Iron   as Fe   Fet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.   Pet.	80le (1:1)
Depth   Organic carbon   Nitrogen   C/N   Carbonate as CacO <sub>3</sub>   as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe	80le (1:1)
Depth   Organic carbon   Nitrogen   C/N   Carbonate as CacO <sub>3</sub>   as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe   Licon as Fe	80le (1:1)
Cole   Fet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet   Pet	(1:1)
Pct. Pct. Pct. Pct. g/cc g/cc g/cc Pct. Pct. Pct. in/in  O-2 2.72 6-10-2 0.35 5-23 0.35 23-27 0.15 27-35 0.12 42-50 0.08 5 bar Oven dry	
0-2 2.72 6-10½ 0.35 5½-23 0.35 27-35 0.12 42-50 0.08	KCI
0-2 2.72 6-10½ 0.35 52-23 0.35 23-27 0.15 27-35 0.12 42-50 0.08 50-60 0.08	
23-27 0.15 27-35 0.12 42-50 0.08 50-60 0.08	
27-35 0.12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1
50-60 0.08	1 1
Extractable bases 581a 6HLa CEC 6GId Ratios to clay 803	
Extractable bases 5Bla 6HLa CEC 6Gld Ratios to clay 803	
	Base satur
Depth 6N2d 602b 6P2a 6Q2a Ext. 5A39 Ext. CEC Ext. 15-bar Ca/Mg	503
(In.) Ca Mg Ne K Sum acidity Sum Al Sum iron water meq/100 g	Sum ( cations Pct.
0-2 10.0 2.3 0.1 0.8 5.4 18.7	71
6-10} 0.6 0.7 0.1 0.4 8.8 10.6	17
5½-23 2.2 2.9 0.1 0.3 13.6 19.1 0.6 2.6 0.1 0.3 13.9 18.5 0.6	29
27-35   1.8   3.0   0.3   0.3	29
\$\frac{42-50}{50-60}\$     \$\frac{3.3}{4.0}\$     \$\frac{5.7}{5.4}\$     \$\frac{0.8}{0.3}\$     \$\frac{11.2}{11.2}\$     \$\frac{0.6}{21.3}\$       \$50-60\$     \$\frac{4.0}{5.4}\$     \$\frac{5.4}{0.8}\$     \$\frac{0.3}{0.3}\$     \$\frac{8.2}{8.2}\$     \$\frac{18.7}{18.7}\$	- 148 56
Clay Fraction Analysis 7Alb-d	
Depth Mt. Chl. Vm. Mi. Int. Qtz. Kl. Gibbsite	
7A2	
X.ray 7A3 Mt. = Montmorillonite, Chi. = chlorite, Vm. = Int. = Interstratilied layer, Qtz. = quartz, Ki.	
Relative amounts: blank = not determined, of it, we trace, x = small, xx = moderate, xxx =	, dash = not detected
If, w ITaCo, X = Small, XX = moderate, XX =	Spendant, AAA © U

Soil Type: Hosmer silt loam

Soil No.: S49III-91-1

Location: Union County, Illinois. T. 11 S., R. 1 E., Sec. 34, SE 1/4, NE 40, SE 10, approximately 400 ft.

N. and 150 ft. W. of SE corner.

Vegetation and land use: Cut-over deciduous hardwoods, mostly oak.

Slope and land form: 6 percent, facing north.

Sampled by and date: J. B. Fehrenbacher, J. E. Gieseking, W. S. Ligon, R. T. Odell, G. D. Smith, P. T. Veale, H. L. Wascher, and E. P. Whiteside. November 2, 1949.

Horizon and Beltsville Lab. No.

Al 0 to 2 inches. Very dark grayish brown (10YR 3/2) to dark brown (10YR 3/3) silt lown; 5085 moderate, medium, gramular structure; friable; clear, smooth boundary.

A21 2 to 6 inches. Brown (10YR 4/3) silt loam, somewhat mixed with very dark grayish brown (10YR 3/2); moderate, medium, granular structure; friable; clear, smooth boundary.

A22 6 to 10-1/2 inches. Yellowish brown (10YR 5/4) to light yellowish brown (10YR 6/4) silt loam, 5086 somewhat mixed with dark grayish brown (10YR 4/2) material; weak, coarse, platy, breaking to moderate medium, granular structure; friable; clear, smooth boundary.

B1 10-1/2 to 15-1/2 inches. Dark brown (7.5TR 4/4), heavy silt loam; moderate, medium and fine, subangular blocky structure; firm; peds have thin coats of yellowish brown (10TR 5/6) or brownish yellow (10TR 6/6); clear, smooth boundary.

B21t 15-1/2 to 23 inches. Dark brown (7.5YR 4/4), light silty clay loam; strong, medium, sub-5087 angular blocky structure; firm; peds have thin coats of yellowish brown (10YR 5/6) or brownish yellow (10YR 6/6); clear, smooth boundary.

A'2 23 to 27 inches. Strong brown (7.5YR 5/6) silt loam; common, medium mottles of yellowish brown (10YR 5/6) or brownish yellow (10YR 6/6); moderate, fine, subangular blocky structure; friable, firm in place; peds coated with light brownish gray (10YR 6/2) clear smooth boundary.

B'21x 27 to 35 inches. Yellowish brown (10YR 5/4) silt loam; few, fine mottles of strong brown (7.5YR 5/6); medium, prismatic, breaking to moderate, fine, subangular blocky structure; friable, firm in place, brittle when moist; clay skins evident; prisms are coated with light brownish gray (10YR 6/2); common, medium, iron-manganese concretions; clear, smooth boundary.

B'22x 35 to 42 inches. Dark yellowish brown (10YR 4/4) silt loam; few fine mottles of yellowish red (5YR 4/8); weak, medium, blocky structure; very firm, brittle when moist; exteriors of peds are light brownish gray (10YR 6/2); common, thin, patchy clay skins; few, fine iron-manganese concretions; clear, smooth boundary.

B'3x 42 to 50 inches. Dark yellowish brown (10YR 4/4) silt loam; few, fine mottles of yellowish brown (10YR 5/6); weak, coarse, blocky structure; very firm, brittle when moist; exteriors of peds light brownish gray (10YR 6/2); common, thin, patchy clay skins; common, fine iron-manganese concretions; clear, smooth boundary.

C 50 to 60 inches. Dark yellowish brown (10YR 4/4) silt loam; many, medium, mottles of light brownish gray (10YR 6/2) and a few, fine mottles of yellowish brown (10YR 5/6); massive; very firm.

SOIL Rosmer silt loam

SOIL Nos. 851T11-100-1 LOCATION Williamson County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. 511068 - 511075

-512 551141	ET LABORATO										3. Nos			1 //		•		
		1816	Total						ss and parti			1			1			
	1	<u> </u>	T	1		r	1	Sand	т	S	it	ł			382	ZA2	rse fragm	ents 38
Depth (in.)	Horizon	Sand	Silt	Clay	Very coarse	Coarse	Medium	Fine	Very fine		Int. III	Int. II		ļ	١.	> 2	2 - 19	19-7
(eu. <i>)</i>		(2-0.03)	(0.05 <u>-</u> 0.002)	( = 0.002	(2–1)	1	ı	ļ	(0.1–0.05)	0.05-0.02	0.002)	(0.2-0.02)	(2-0.1)		Cm	l		1 ct. of
0-5	Al.	<del> </del>	182 E	14.4		0.3	1. of -< 2		1.7					├	<u> </u>	Pct.	<	76mm
5-11	A2		82.5	19.4	_	0.2	0.3	0.7	1.4	ļ	42.6 42.5	37.3		1		tr.	ł	1
<u> 11-18</u>	811	1	74.5	22.7	0.1	0.4	0.4	0.6_	1.3		41.5	34.7			L	-	ł	1
18-23	B12		74.8	22.2	0,2	0.5	0.4	0.6	1.3		43.0	33.5			[	T-		
23-26 29-35	Bx B21	1	70.0	27.2	0.1	0.5	0.3	0.6	1.3		40.3	31.3 32.3		1		-		
36-43	B22	<del>                                     </del>	72.2	25.4	0.1	0.1	0.2	0.4	1.5		39.6 40.2	33.8		<del> </del> -	1	+=-	<del> </del>	<del> </del>
43-48	<b>B</b> 3		75.2	23.3	<u> </u>	0.1	0,1	0.3	1.0		42,5	33.9				-		
		<u> </u>																
	6A1a	1	Į		1			Bulk densif	y.	4D1	<u> </u>	ater conte	nt		4C1		pН	
Depth	Organic	Nitrogen	C/N		Carbonate		i	4Ale	4A1h			481c	4B2				8Cic	8C1a
(In.)	Earbon				as CaCO <sub>3</sub>	as Fé		3≤ bar	Oven dry	COLE		¾ bar	15 bar		WRD		(1:1)	(1:1)
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct,	Pct.		in/in		KCI	H <sub>2</sub> O
0-5	0.62					•										]		4.8
5-11 11-18	0.14	1	i		ĺ		1	ł						ĺ	l			4.9 4.8
18-23	0.06	ļ <u> </u>																4.7
23-26	0.05				l									1	ł		1	4.6
29-35 36-43	0.04	<del>                                     </del>	-		<del> </del>		1	<del> </del>						ļ			-	4.6
43-48	0.01							<u></u>										4.6
		Extractab	e bases 5	Bla		6HLa	С	EC	6G1d			R	atios to cla	ıy	8D3		Base sat	urstion
Depth	6N2d	602b	6P2a	6Q2a		. Ext.		·									5C3	5C1
(In.)	Ca	Mg	Na	K	Sum	acidity	5A3a Sum		Ext. Al			CEC Sum	Ext. iron	15-bar water	Ca/Mg	1	Sum	NH4 DA
		ļ	l ,	ļ	1		cations	ļ					***				cations	l '
0-5	1.0	1,1	0.2	0.3	meq/100 g	8.3	10.9		_		_						Pct.	Pct.
5-11 11-18	2,2	2.5	0.2	0.3		9.1	14.3										36	
18-23 23-26 29-35	3.4	4.5	0.3	0.3		11.8	20.3										42	
36-43 43-48	4.7	5.9	0.5	0,2		10.4	21.7										52	
											 							-
	1			Clay Frant	ion Analysi:	7AIN-4			ь					L	<u> </u>	<u> </u>	<u> </u>	
Depth	,	0					,											
(in.)	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite										
		;	7A2															
	-		X-18				7/	A3							chlorite, Vi			= mica,
												int. — ir	terstratifie	d layer, Qt	r, = quartz,	KI. — Kaoli	inite	
							1								t determine			
	T											tr. 🛥 tra	¢a, x == \$61	∎II, xx = m	oderate, xxx	c = abunda	nt, xxxx =	oomina?
	+	<u> </u>						-										

Soil Type: Hommer silt loam. Soil No.: S51111-100-1

Location: Williamson County, Illinois. T. 108., R. 1E., Sec. 28, SW 1/4 SW 40, NW 10 - 270 feet E. of

NW Cor. of NW 10 on south side of private road. Aerial photo BHK-2H-20 8-5-51.

Vegetation and land use: Bluegrass and weeds.

Slope and land form: 2-3 percent.
Sampled by and date: Herman L. Wascher and J. B. Fehrenbacker. October 18, 1951.

Horizon and Beltsville Lab. No.

O to 5 inches. Dark yellowish brown (10YR 4.5/4) silt loam, soft crumb structure.

511068

A2 5 to 11 inches. Brown (7.5YR 5/4) silt loam, soft crumb structure.

511069

11 to 18 inches. Strong brown (7.5YR 5/6) heavy silt loam to light silty clay loam, soft 511070 subangular blocky structure.

**B12** 18 to 23 inches. Strong brown (7.57R 5.5/6) very light silty clay loam, fragmental to sub-511071 angular blocky structure.

23 to 26 inches. Yellowish brown (10YR 5/4) with strong brown (7.5YR 5/6) iron mottlings, 511072 silt losm, fragmental to blocky structure with moderately thick pale brown (10YR 6/3)

coatings.

29 to 35 inches. Yellowish brown (10YR 5/4) and brown (7.5YR 4/4) with thick pale brown (10YR 6/3) coatings, moderately heavy silty clay losm, coarse blocky structure in prismatic B21 511073 form in upper part.

36 to 43 inches. Brown to yellowish brown (10YR 5/3 to 5/4) and brown (7.5YR 4/4) with moderately thick pale brown (10YR 6/3) coatings, coarse blocky structure; medium silty clay B22 511074 losm.

43 to 46 inches. Light brownish gray to brown (10YR 6/2 to 5/3) and brown (7.5YR 4/4), iron concretions of dark brown (7.5YR 3/2), faint pale brown (10YR 6/3) coatings, coarse blocky to massive structure. Light silty clay loam. 511075

Notes: Broken moist colors.

SOU Hosmer silt loam

SOIL Nos. 851T11-100-2 LOCATION Williamson County, Tilinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. \_511076 - 511082

		1B16						Size cla	ss and parti	cle diamet	er (mm) 3A	1			-			
	Ì		Total					Sand	, , , , , , , , , , , , , , , , , , , ,	Si				Γ	382	Сов	rse fragme	nts 3
	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine				1				2A2	T	T-
Depth (In.)	Horizon		(0.05- 0.002)			(1-0.5)		(0.25-0.1	Very fine (0.1–0.05)	0.05-0.02	Int, III (0.02- 0.002)	Int. II (0.2–0.02)	(2-0.1)		Cm	== 2 Pct.	2 - 19 	19- t. of _ 76mm
0-8	Ap	4.5	80.7	14.8	0.1	0.3	0.6	1.8	1.7	38,1	42.6	40.8	2.8	1	+	-	_	, U.
8-15	A2	2.0	79.9	18.1	-	0,1	0.3	0.5	1.i	31.9	48.0	33.3	0.9		1	-	1	Į
15-25	B11	1.8	75.8	22.4		0.2	0.3	0.5	0.8	29.4	46.4	30,5	1.0	1	<u> </u>	l <u>-</u>		L.,
25-28	B12	1.4	68.2	30.4	-	0.2	0.2	0.4	0.6	25.4	42.8	26.2	0.8		Ţ			Ι
28-36	B2	1.3	67.0	31.7	-	0.1	0.2	0.4	0.6	26.0	41.0	26.9	0.7	ļ		-		I
<u>36-48</u> 48-56	B3 C1	1.0	72.5	26.5		-	0.1	0.3	0.6	28.6	43.9	29.4	0,4	<b>!</b>	ļ	<b>├</b> -	-	├
40-36	ļ	1.0	76.0	23.0	•	<u>-</u>	0.1	0.3	0.6	31.7	44.3	32.5	0.4	į		-		_
			i	-				Bulk densit	<u> </u>			ater conte	nt				рН	L
Depth	6Ala Organic	Nitrogen	C/N	ĺ	Carbanata	Eut :		T		4D1	<u> </u>			{	4CI		T -	201
(in.)	carbon	, unitogen	U/N	1	Carbonate as CaCO <sub>3</sub>	Ext. iron		4Ale	4A1h	COLE		4B1c	482	1		1	8CIc	801
(,					as bacog	8010		>a bar	Oven dry	COLE		⊁§bar	15 bar		WRD		(I:1)	(1::
	Pct.	Pct.	<u> </u>	L	Pct.	Pct,	g/cc	g/cc	g/cc		Pet,	Pct.	Pct.	<u> </u>	in/in	<u> </u>	KÇI	H <sub>2</sub> (
0-8 8-15 15-25	0.71 0.31 0.05													!				6. 5. 4.
25-28	0.04	- · · · -	T												t —	<del>                                     </del>	$\vdash$	4.0
28-36	0.04	}					İ									ĺ	Į.	4.
36-48	0.01	<del>1</del> —		1			<b>└</b>											4.
<b>48-</b> 56	0.01																ĺ	4.
		Extractab	le bases 5	Bla	,	6HLa	C	EÇ	6G1d			R	etios to cla	у	8D3		Base sat	uration
Depth	6N2d	602b	6P2a	6Q2a		Ext.							ĺ				503	5C
(ln.)	Ca	Mg	Na	ĸ	Sum	acidity	5A3a Sum	]	Ext.			CEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum	L., .
	"	""			Sum	aciuity	cations		AI .		İ	SUM	IFOR	water			cations	NH4
		·		<u> </u>	meq/100 g			·			L.						Pct.	Pct
0-8	6.8	1.6	0.2	0.1		4.5	13.2										66	Г
8-15	1	1 '			) ]		Ì	)	]			1			Ì			ł
15-25	2.6	1.7	0.2	0.2		10.2	14.9										32	
25-28 28 <b>-</b> 36 3 <b>6-4</b> 8	3-7	4.5	0.5	0.3		15.0	24.0	ļ									38	
¥8-56	5.8	5.3	0.6	0.3		8.3	20.4										59	
						1												
				Clay Fract	ion Analysis	7Alb-d									L		<u> </u>	L
Depth (In.)	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	K1.	Gibbsite										
	-	 	7A2 X-ra		 		7	A3 ==							chlorite, Vr r, == quartz,			= mic
									i			Relative	amounts:	blank = no	t determine	i, dash – i	nat detecte	
												tr. <b>⇒ tra</b>	ce, X = \$M	uii, XX = M	oderate, xxx	. — apunda	ше, хххх =	uemir
	<del>                                     </del>			-														
		ļ					_											

Soil Type: Hosmer silt loam

Soil No.: S51I11-100-2

Location: Williamson County, Illinois. T9S, R2E, Sec. 19, NW 1/4, ME40, NW10 - On ridge 1/8 mile wide

between draws, in cut on north side of R.R. See Aerial photo BRK-2H-175, 8-5-51.

Vegetation and land use: Bluegrass and weeds.

Slope and land form: 4 - 5 percent to north.

Sampled by and date: J. B. Fehrenbacher, October 17, 1951.

Horizon and **Beltsville** Lab. No.

0 to 8 inches. Brown (10YR 4/3) silt losm, fine crumb structure. Ap 511076

8 to 15 inches. Brown to yellowish brown (10YR 5/3 to 5/4) silt losm, crumb to weak platy

511077 structure.

15 to 25 inches. Yellowish brown (10TR 5/6) light silty clay loam, blocky to subangular

511078 blocky structure.

25 to 28 inches. Vallowish brown (10VR 5/k) mottled with dark vallowish brown (10VR k/k) and 812

**D**7

structure.

28 to 36 inches. Brown (7.5YR 5/4) mottled with pale brown (10YR 6/3) and yellowish brown 511080 (10TR 5/8) heavy silty clay loam, medium to coarse blocky structure with tendency to prismatic

form in upper part.

36 to 48 inches. Yellowish brown (10YR 5/4) mottled with pale brown and gray (10YR 6/3 and B3 511081 3/1) silty clay loss, coarse blocky structure.

48 to 56 inches. Dark yellowish brown (10TR 4.5/4) mottled with pale brown (10TR 6/3) heavy Cl. 511082 silt loam, massive structure.

56 to 70 inches. Reddish brown (5YR 4/4) streaked with light brownish gray (10YR 6/2) silt Not Sampled loam, probably Farmdale losss.

Notes: Surface Ap seemed thicker than normal, may have been some piling up. Broken moist colors. 56 inch Peorien losss. 14 inch Farmdale losss on Illinoian till.

LAB. Nos. 54908 - 54917 SOIL SURVEY LABORATORY Beltsville, Maryland

	1	1815							s and parti	cle diamete								
	1		Total					Sand		Sil	t			T	3B2	Coa	rse fragm	ents 3
	1	Cond	Cite	01	Very		Modium	Fire	V 6		TT			ļ	l	2A2		T
Depth	Horizon	Sand	Silt	Clay	coarse	Coarse	Medium	Fine	Very fine		int. III	Int. II		{	١ .	<b>&gt;-</b> 2	2 - 19	19
(in.)	1	(2-0.05)	(0.05- 0.002)	(< 0.002)	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0.1 <b>–0</b> .05)	0.05-0.02	(0.02- 0.002)	(0.2-0.02)	(2-0.1)	J	Cm	1		l ct. of
	]		j 0.002)	<u>'</u>	1 .		t. of == 2	, mm	<u>'                                    </u>		0.502)				İ	Pct.		76mm
0-4	Al		20.5	4.4	0.3	3.9	22.1	43.0	5.8		10.1	33.9		1	<b>-</b>		-	T
4-7	A21	ľ	20.5	4.2	10.3	3.1	22.6	43.2	6.4	1 1	10.8	34.4				-		1
7-14	A22		21.5	3.7	1 -	3.3	22.4	42.9	6.2		10.9	35.1		1		l -	l	1
14-19	A23	<del> </del>	28.1	4.2	<del>                                     </del>	3.1	20.0	38.7	5.9	<del> </del>	14.9	35.3		<b>├</b> ──	<del> </del>	<del>-</del> -	<del>1</del>	+
19-26	B1			9.2	-	8.s	16.6	31.9	5.2		17.8			l		-	1	i
26-34	B21	1	34.3	12.2	0.1	2.7	15.5		5.2		19.1	35.9		l		ļ <del>-</del>	Į.	
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34-39 39-46	C1	l	11.7		0.2	3.7	24.8	144.4			13.3 5.8	33.4				-	ŀ	
		l		5.9 8.5		5.3			7.7	, ,	1.4	33.0		ļ	1	1 -	ł	1
46-51	C2	├	3.4		0.1	4.3	30.1	47.8		$\vdash$		25.3		<del> </del>	-		<b>├</b> ──	
51-58	C3		2.6	2.5	-	3.8	31.5	52.1	7.5		0.7	28.8				-		1
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	<del>†</del>			<del>-</del>	<del></del>	<u></u>		Bulk densit	·	<del> </del>		ater conte		<del></del>			-11	_
	6Ala			ĺ			<del></del>	Day Gallar	<del>,</del>	4D1		ater conta		ł	4C1	-	pH	,
Depth	Organic	Nitrogen	C/N	1	Carbonate	Ext. iron	<b>\</b>	4Ale	4Alh	1		481c	4B2	1	]	1	8Clc	80
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	ł .	l '		1			)	1	}	]	[	l		ļ	in/in	l	KCI	Н,
	Pct.	Pct.			Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.	<u> </u>	ļ			_
0-4	1.64	İ					Į	Į	Į	(				ļ	l .	ļ	1	4.
4-7	0.53	1		ì	]		İ		i					i	1			4.
7-14	0.16				L									<u> </u>				5.
14-19	0.18	Į I		į	ļ		l	1	ļ	\				}	1	1	i i	5.
19-26	0.15				1											ĺ		5.
<u> 26-34                                    </u>	0.09							<u> </u>										4.
34-39	0.11	ļ		1		i	1	ì	}	\ \ \				i	1	Ì		15.
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46-51	0.08			L			L	L									<u> </u>	اح.
51-58	0.06							1	}	]								١5.
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		Extractab	le bases 5	Bla		6HJ.a.	¢	EC	6G1d	[ ]		R	atios to cla	ay	8D3	ĺ	Base sa	turatio
	6N2d	602b	6P2a	6Q2a		Ext.	İ			l i					l		503	50
Depth	l BINZO	6020	OF28	0028		EXI.	5A3a	\	Ext.	} }		CEC	Ext.	15-bar	Ca/Mg	1	1 303	00
(ln.)	Ca	Mg	Na	K	Sum	acidity	Sum	1	Al.	ĺĺ		Sum	Iron	water		[	Sum	NHΔ
	1			i			cations							l			cations	7
				<u> </u>	meg/100 g				<u>+</u>								Pct.	Po
0-4	1.0	0.4	tr.	tr.		7.2	8.6	1									16	П
4-7	0.4	0.3	tr.	tr.		5.5	6.2		l	[ ]				ļ	Į.	l	11	1
7-14	0.5	0.1	tr.	0.1	1	2.3	3.0	1	]	[ ]						l	23	
14-19	0.5	0.2	tr.	tr.	1	1.7	2.4			$\vdash$				1	1	Γ	29	1
19-26	1.3	0.6	tr.	tr.	[	3.6	5.5	ļ		ļ ļ			}	1	1	}	314	1
26-34	1.4	1,1	0.1	tr.	i	5.3	7.9		ł	i				l_	]	L	33_	L
34-39	1.4	1.1	0.1	tr.		4.7	7.3							I			36	
39-46	0.9	0.5	tr.	tr.		2.5	3.9	1	1	} \	1			1	1	1	36	ì
46-51	1.4	0.2	0.1	tr.		3.6	5.3									ĺ	32	L
51-58	1.5	0.8	tr.	tr.		1.1	3.4		<u> </u>						T		68	Ţ
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	Ť			Clay Front	loa Analysis	7Alb d	<del>,</del>	_										
	<del></del>			Giay Fract	con Amaryso	- Min-n	$\overline{}$			1								
Depth	Mt.	Chl.	Vm.	Mi.	Int.	Qtz.	KI.	Gibbsite	i									
(in.)				l	(		ļ	l	Į	ļ								
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Soil Type: Lamont sandy loam.

Soil No.: S54Ill-52-1

Location: Lee County, Illinois. T.19 N., R.9 E., Sec. 35, NW 1/4, SW 40, center of 40 about 32 rods east

and 6 rods north of private road gate into timber pasture on north slope of sandy ridge.

Vegetation and land use: Bluegrass, tickle grass, and a few weeds were the immediate ground cover. A few oak trees lie just to north, east, and west but not over sampling site or to the south.

Slope and land form: 9 - 10 percent.
Sampled by and date: H. L. Wascher, J. D. Alexander, E. J. Pedersen, and L. J. Bartelli. October 26, 1954.

Morizon and Beltsville Lab. No.

0 to 4 inches. Very dark brown (10YR 2/2) very dark brown (7.5YR 2/2) rubbed sandy loam, fine

54908 crumb to weak granular.

A21 4 to 7 inches. Dark brown (7.5YR 3.5/2) fine sandy loam to loamy fine sand, single grain,

54909 presence of channels or balls of dark colored material from Al.

422 7 to 14 inches. Brown (7.5YR 4.5/4.5), loamy fine sand, single grain. 54910

A23 14 to 19 inches. Brown (7.5YR 4.5/4), loamy fine sand, single grain, very slightly

54911 cemented.

19 to 26 inches. Brown (7.5YR 4.5/4) (60 percent) reddish brown (5YR 3.5/4) (40 percent),

light loam, breaks into 1/4 - 1/2 inch irregular fragments, slightly cemented. 54912

B21 26 to 34 inches. Brown to dark brown (7.5YR 4/4), loam to light clay loam, 1/2 inch irregular 54913 subangular blocky, fibrous roots and in this horizon, wavy distinct boundary to B1, 3-4 inch

B22 34 to 39 inches. Brown (7.5YR 4.5/5), clay loam, breaks into 3/4 inch irregular angular 54914

fragments.

39 to 46 inches. Dark yellowish brown (9TR 4/4), loamy sand, single grain.

54915

46 to 51 inches. Dark reddish brown (6YR 3/5), sandy clay loam, irregular angular fragments.

54916 slightly cemented iron banded layer.

51 to 58 inches. Yellowish brown (10YR 5/4) stained or mottled with brown to dark brown (7.5TR 4/4) loose sand, single grain, irregular boundary with layer above, some iron concretions of 1/8 - 1/4 inch in size. 54917

СĿ 58 inches plus. Another iron cemented horizon similar to C2 above.

Not Sampled

Notes: All colors from moist samples.

SOIL CONSERVATION SERVICE SOIL Nos. \$62711-2-2 LOCATION Alexander County, Tilinois SOIL Muren silty clay loam SOIL SURVEY LABORATORY Lincoln, Nebraska \_\_ LAB. Nos. 16935-16943 March 1966 1A, 1B1b, 2A1, 2B General Methods: Size class and particle diameter (mm) 3A1 Total Sand 4ELc 2A2 Coarse Tragments Clay Very coarse (2-1) Moved Sand Silt Medium Fine Very fine łat. 🎹 2 - 19 | 19 - 76 Clay (2-0.05) (0.05-(1-0.5) (0.5-0.25) (0.25-0.1) (0.1-0.05) (0.05-0.02) (0.02-0.002) (ln.) (2-0.1)Pct Ap B21 0-7 2.3 76.1 21,6 0.2a 0.1a 0.36 1.7b 42.5 33.6 0.6 Tr. 1.70 1.50 1.70 1.70 38.9 40.3 41.9 43.3 44.6 33.6 34.5 33.1 33.5 34.8 40.6 42.0 43.7 45.2 46.4 72.5 74.8 75.8 25.4 23.4 23.0 21.0 0.3a 0.2a 0.2a 0.2a 0.6 0.3 0.3 0.5 0.5 2.1 1.8 2.0 2.2 4-9 0.la 0.la 0.2a B22 B23 B31 Tr.a 0.la Tr.a 0.la 0.la 0.la 34-44 B32 2.2 79.4 18.4 0.14 0.la 0.la 0.2a 1.6 80.5 82.5 83.6 <del>44-50</del> 1.9 2.1 1.7 17.6 15.4 14.7 46.3 46.4 45.7 **B33** Tr.a 0.1a 0.28 1.66 34.2 48.0 0.3 1.3 50-61 ci Tr.c Tr.c 1.8c 48.3 0.3 0.2c 0.1c 36.1 1.2 61-72+ 0.1c 47.2 0.20 1.4c 37.9 1.1 Water Content 6Ala 6Bla Bulk density μm 4Ala 4Alc 4Alb l<sub>4</sub>Bl<sub>4</sub> 4B3 4B1b 4B2 4C1 801a COLE Depth Organic Nitrogen C/N Carbonate 1/3-mb Field-Air-Field. carbon as CaCO (1:1) State 30-Cm. Dev State 30

Soil Type: Muren silty clay loam

Soil Nos.: S62Ill-2-2

Location: Alexander County, Illinois, T145, R2W, Sec. 29, NE 160, NW 40, SE 10, 137 steps east of large mulberry tree and located in middle of slope 26 steps south of gully in draw.

Parent Material: Deep loess. Physiography: Upland sideslope.

Slope: 16 percent.

Drainage Class: Moderately well. Vegetative Cover: Grass (pasture).

Erosion: Severe.

Sampled by: R. B. Grossman and G. S. Holmgren, May 22, 1962. Described by: G. O. Walker, J. B. Fehrenbacher and W. D. Parks.

Horizon and Tincoln Lab. No.

O to 4 inches. Yellowish brown (10YR 5/4) light silty clay loam; moderate thin platy structure breaking to weak medium subangular blocky structure; firm; pH 5.2; clear smooth boundary. Ap 16935

4 to 9 inches. Yellowish brown (10YR 5/4) silty clay loam with few medium distinct light brownish gray (10YR 6/2) and few medium prominent yellowish red (5YR 5/6) mottles; moderate medium subangular blocky R21 16936 structure breaking to moderate thin platy structure; firm; brown (7.5YR 4/4) clay films on surface of the peds; pH 5.3; clear smooth boundary.

9 to 16 inches. Brown (7.5YR 5/4) silty clay loam with few medium distinct light brownish gray (10YR 6/2) and few magium prominent vellowish red (5YR 4/6) mottles: moderate to strong medium subangular blocky B22

## smooth boundary.

- 16 to 25 inches. Dark brown to brown (7.5YR 4/4) light silty clay loam with common medium distinct brown (10YR 5/3 moist) and light gray (10YR 7/2 dry), and few common prominent yellowish red (5YR 4/6) mottles; weak to moderate medium and coarse subangular blocky structure; firm; slightly fragile; medium continuous reddish brown (5YR 4/4) clay films on surface of the peds, root channels filled with reddish brown (5YR 4/4); pH 4.6; gradual smooth boundary. 16938
- 25 to 34 inches. Park brown to brown (7.5YR 4/4) heavy silt loam with common medium distinct grayish brown (10YR 5/2 moist) and light gray (10YR 7/2 dry) and common medium prominent dark reddish brown (5YR 3/4) mottles; weak coarse angular blocky structure; firm; slightly fragile; peds coated with brown (7.5YR 4/4) clay films and thin smears of black (10YR 2/1) Mn; many fine pores, and few very dark brown (10YR B31 16939 2/2) Fe and Mn concretions; pH 5.0; gradual smooth boundary.
- 34 to 44 inches. Dark brown to brown (7.5YR 4/4) silt loam with common medium distinct grayish brown (2.5Y 5/2) mottles; weak coarse angular blocky structure; firm; peds coated with thin discontinuous dark brown (7.5YR 3/2) clay films, root channels lined with black (10YR 2/1) Mn coatings and a few black (10YR 16940 2/1) Fe and Mn concretions; pH 5.6; gradual smooth boundary.
- 44 to 50 inches. Dark brown to brown (10YR 4/3) silt loam with common medium prominent grayish brown **B**33 (2.5Y 5/2) mottles; very weak coarse angular blocky structure to massive; firm; peds coated with thin discontinuous dark brown (7.5YR 3/2) clay films, and thin continuous black (10YR 2/1) Mn and thin grayish brown (2.5Y 5/2) silt; root channels lined with black (10YR 2/1) Mn coatings, and a few black (10YR 2/1) Fe and Mn concretions; pH 5.8; gradual smooth boundary.
- 50 to 61 inches. Bark yellowish brown (10YR 4/4) silt loam with common fine prominent light brownish gray (10YR 6/2) and few fine faint dark yellowish brown (10YR 3/4) mottles; massive; frisble; some thin black (10YR 2/1) Mn stains; pH 6.2; arbitrary boundary.
- 61 to 72 inches plus. Dark yellowish brown (10YR 4/4) silt loam with common fine prominent light brownish gray (10YR 6/2) mottles: massive: friable: fever Mn st han in above horizon: pH 6.7. Boring to 10

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

	10-64				SOIL CONSERVATION SERVICE
	SON Muren silt loam		862II1-2-3		
	SOIL SURVEY LABORATORY Lincoln, Nebraska General Methods: 1A, 1Blb, 2Al, 2B			LAB. Nos. <u>16944-16952</u>	March 1966
			Size class and particl	e diameter (mm) 3A1	
	Total  Total  Ponth Marienn Sand Silt Clay Very	Coarse Medium	Sand Fine Very fine	Silt Int. III Int II	Coarse fragments
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Soil Type: Muren silt loam Soil Nos.: 962III-2-3

Location: Alexander County, Illinois, T14S, R2W, Sec. 29, NE 160, NW 40, SE 10, 137 steps east of large mulberry tree and located at the foot of the slope 14 steps south of the gully in draw.

Parent Material: Deep loess. Physiography: Upland footslope. Slope: 8 percent. Drainage Class: Moderately well.

Vegetative Cover: Grass (pasture). Frosion: Moderate.

Sampled by: R. B. Grossman and G. S. Holmgren, May 22, 1962. Described by: G. O. Walker, J. B. Fehrenbacher and W. D. Parks.

Horizon and Lincoln Iab. No.

0 to 5 inches. Mixed dark grayish brown (10YR 4/2) and dark brown (7.5YR 4/4) silt loam; weak to moderate Ap 16944 thin platy structure; friable; pH 5.8; abrupt smooth boundary. (Soil may be removed from slope above and deposited on this profile.)

5 to 9 inches. Dark brown to brown (7.5YR 4/4) heavy silt loam; weak medium subangular blocky structure; friable; pH 5.8; clear smooth boundary. (May be mixed with material deposited from slope above.) 16945

9 to 15 inches. Dark brown to brown (7.5YR 4/4) light silty clay loam with few fine faint brown (7.5YR 5/4) mottles; weak medium subangular blocky structure; firm; many small pores; pH 6.0; abrupt smooth B21 16946 boundary.

15 to 27 inches. Yellowish brown (10YR 5/4) light silty clay loam with common medium distinct light ITR22 brownish gray (10YR 6/2) mottles; moderate medium subangular blocky structure; peds are coated with medium dark brown (7.5YR 4/4) clay films; firm; pH 6.0; clear smooth boundary. 16947

27 to 38 inches. Dark yellowish brown (10YR 4/4) silty clay loam with common medium distinct light brownish gray (10YR 6/2) mottles; moderate medium subangular and angular blocky structure; firm; peds coated with medium continuous dark brown (7.5YR 4/4) clay films; pH 5.3; abrupt smooth boundary. IIB23 16948

38 to 42 inches. Dark brown (7.5YR 4/4) silt loam with common medium prominent grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) mottles; weak coarse angular blocky structure; firm; slightly fragile; peds coated with thin discontinuous brown (10YR 4/3) clay films; pH 6.2; gradual smooth boundary. IIIB31 16949

42 to 52 inches. Dark brown (7.5YR k/k) silt loam with few fine prominent orawish brown (10YR 5/2) mot. 111335

SOIL Muscatine silt loam

SOIL Nos. S55111-75-2 LOCATION Pike County, Illinois

SOIL SURVEY LARDRATORY Beltsville, Maryland

551786 - 551794 LAB. Nos.

- 1		Linu						Cizo ol	s and partic	le dismete	r (mm) 34							_
		1816	Total					Sand	o anu parti	sil diamete			1		3B2	Coa	rse fragme	nts
[		Sand	Silt	Clay	Very	Coarse	Medium	Fine	Vary fine		Int. III	int. 🏻				2A2		,,
Depth (in.)	Horizon	(2-0.05)		( = 0.002)	coarse				(0.1-0.05)	0.05-0.02	(0.02-	(0.2–0.02)	(2-0.1)		Cm	<b>&gt;-</b> 2	2 - 19	15
!!!!. <i>!</i>		,2-0.03)	0.002)	0.002	(2-1)		of < 2 i	1	1,21, 1,33,		0.002)					Pct.	Pc	t. of
0-7	Ap	4	78.9	17.9	-	0,2	0.2	0.4	2.4		29.4	52.1				-		Ē
7-14	Al		74.8	23.2	-	0.0	0.1	0.2	1.7		32.7	43.9				-		1
4-18	A3		72.4	24.8	-	0.1	0.1	0.2	2.4		31.7.	43.2						L
8-21	BI		70.2	28.2	-	0.0	0.1	0.1	1.4		31.7	39.9				-	l .	ĺ
21-27	B21 B22	i '	66.6	30.3	-	0.1 0.1	0.2	0.2	2.6		31.2 31.7	38.1 37.7				_	1	ĺ
27-35 35-48	B3	<del> </del> -	71.2	26.6	-		0.2	0.2	1,6		33.8	39.1					† ·	r
8-58	CI		73.7	24.4	-	0.2	0.2	0.2	1.3		37.6	37.5				-		1
8-74	C2		76.1	22.0		0,2	0,1	0.2	1.4		36.1	41.5				-	ļ	L
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			<u> </u>	<u> </u>	<u> </u>			Bulk densit	<u></u>		l v	later conte	nt				 pH	느
	6A1a	N:4	C.W.			Ext. iron		4Ale	4A1h	4D1		4B1c	4B2		4C1		8Ctc	Ţ
Jepth (In.)	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	as Fé				COLE					WRD			1
					'			≥s bar	Oven dry			⅓ bar	15 bar		1		(1:1)	۱ ا
	Pct.	Pct.			Pçt.	Pct.	g/cc	2/cc	g/cc		Pct.	Pct.	Pct.		in/in		KCI	Ľ
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7-14 4-18	1.25 0.96						1			<b> </b>	1	}						3
8-21	0.67			<u> </u>				<b>l</b>	-		+	<del>                                     </del>	<b> </b> -					1
1-27	0.53													i				1
7-35	0.36	ļ		↓	ļ		<b> -</b>	<u> </u>	<del> </del>	ļ	-		<b>_</b>			<del>                                     </del>	1	H
5-48 8 58	0.24	1			1	ł			1			1						1
18-58 18-74	0.16					1				L		<u> </u>	L		<u> </u>	<u> </u>	<u> </u>	1
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	-		ble bases		T	6HLa	۱۰ ۲	EC	bara				Tation to the	,	1	1	5C3	Ī
Depth	6N2d	6026	6P2a	6Q2a		Ext.	5A3a		Ext.		ŀ	CEC	Ext.	15-bar	Ca/Mg		303	
(In.)	Ça	Mg	Na	K	Sum	acidity	Sum		Al			Sum	iran	water		Į	Sum	N
	ļ	ļ	1	ŀ		<u> </u>	cations	I	ا _	l						1	cations Pct.	
0-7	12.2	2.6	0.1	0.4	meg/100 g	3.8	19.1	T	T	<u> </u>		<b>†</b>	<u> </u>		T		50	T
7-14	9.0	2.4	0.1	0.3		8.2	20.0				1	1			1	1	59	
4-18	8.6	2.8	0.1	0.3	<u> </u>	8.0	19.8	L	ļ		ļ		ļ		1	<del> </del>	60	+
8-21	10.2	4.1	0.2	0.3		7.9	22.7 24.8										68	1
21-27	11.2	5.1 5.6	0.2	0.4		7.9	25.2			-	1	1					71	
2 <b>7-35</b> 35 <b>-4</b> 8	11.6	5.3	0.3	0.4	1	5.8	22.8	1	1	1			1				74	Γ
8-58	10.3	5.7	0.3	0.4		5.1	21.8	1		1		i					77	
8-74	9,1	5.5	0.3	0.3	-	4.3	19.5	<del> </del>		<del>  .</del> . –	<del> </del>	1	-		<del>  -</del>		78.	$\dagger$
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		7		T	tion Analys			Т	1	-								
Depth (în.)	Mt.	Çhl.	Vm.	Mi.	int.	Qtz.	KI.	Gibbsite										
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<b>I</b> .	<u> </u>	7A3 ———				Mt. =	Montmorillo	nite, Chl. =	= ¢hlorite, \	/m, = Veri	niculite, m	i =
	-	<del>                                     </del>	x.	ray	1	T	1	//\3 <del></del>		1		int. =	interstratific	d layer, Q	tz quartz	, KI. = Ka	olinite	
	]											Relativ	e amounts:	blank == n	ot determin	ed, dash =	not detec	led
	<del> </del>	1	+	<del> </del>	1	<del> </del>	†	1	1	1		tr. = t	ràce, X = SN	nell, xx ⊷ f	noderate, x	cx — abun	pant, XXXX =	= d
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Soil type: Muscatine silt loam

Soil No.: S55I11-75-2

Location: Pike County, Illinois. T4S, R6W, Sec. 35, NW 160, SE 40, NE 10, NW corner of 10-34 rds. W.

of center of rd. and 21 ft west of fence and 75 ft south of 1/4 line fence. Vegetation: Rotation pasture - red clover.

Slope: 1- 1/2 to 2 percent.

Erosion: None

Drainage: Highly imperfect to moderately well.

Permeability: Moderate to moderately slow.

Parent material: 112 inches of peorian loss to possible Farmdale loss, 130 inches to old soil profile

with plastic clay B in Loveland loess.

Physiography: Deep loess covered Kansan till plain.

Collected by and date: Herman L. Wascher, George O. Walker, Charles E. Downey, October 18, 1955.

Horizon and Beltsvile Lab. Nos.

0 to 7 inches. Very dark grayish brown to very dark brown (10YR 2.5/2) silt loam, weak, 551786 fine, granular to subangular blocky structure, friable. Many roots and numerous worm-

holes.

7 to 14 inches. Same color, texture, structure and consistence as Ap layer. A٦

551787

551789

551791

14 to 18 inches. Very dark grayish brown (10YR 3/2) silt loam, medium, fine subangular

551788 blocky structure, friable. Many roots and numerous wormholes.

18 to 21 inches. Dark brown (10YR 4/3) light silty clay loam, slightly mottled with a Bl.

few, fine, distinct yellowish brown (10YR 5/6) mottles, and coated with very dark grayish brown (10YR 3/2) and light brownish gray (10YR 6/2) when dry, strong, fine to medium,

subangular blocky structure, firm. Many roots and numerous wormholes.

21 to 27 inches. Dark brown (10YR 3.5/3) silty clay loam, mottled with a few, fine, faint B21 pale brown (10YR 6/3) mottles, and coated with light brownish gray (10YR 6/2), strong, 551790

medium to coarse, subangular blocky structure, firm. Many roots and numerous wormholes.

27 to 35 inches. Yellowish brown to pale brown (10YR 5/4 to 6/3) silty clay loam, mottled with dark grayish brown (10YR 4/2) and coated with light brownish gray (10YR 6/2) and dark B22

brown (7.5YR 3/2) clay skins, and streaked with very dark brown (10YR 2/2) organic matter

in root channels, moderate columns which breaks to a strong, coarse, subangular blocky structure, firm. Few roots and wormholes.

35 to 48 inches. Pale brown (10YR 6/3) light silty clay loam, mottled with many, fine, **B**3 551792

distinct yellowish brown (10YR 5/4) mottles, coated with very dark grayish brown (10YR 3/2) clay skins, streaked with very dark brown (10YR 2/2) organic matter in root channels.

Weak, coarse subangular blocky structure, friable. Few roots and wormholes.

Cl 48 to 58 inches. Yellowish brown (10YR 5/6) silt loam, mottled with common, fine, distinct

551793 pale brown (10YR 6/3) mottles, massive structure, friable.

58 to 74 inches. Pale brown (10YR 6/3) silt loam, mottled with common, medium, prominent

551794 yellowish brown (10YR 5/8) mottles.

Notes: Borings were made in the bottom of the pit to a depth of 154 inches. At this depth a plastic clay Kansan till or Loveland losss was found. Colors refer to moist soil unless indicated otherwise.

SCS-421 10-64 (Rev. 9-66) U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE SOIL Muscatine silt loam SOIL Nos. S55II1-75-6 LOCATION Pike County, Illinois SOIL SURVEY LABORATORY Beltsville, Maryland 551821 - 551829 \_\_\_ LAB. Nos. \_ Tige class and norticle diameter (mm) tar JEIN,

Soil Type: Muscatine silt loam

Soil No.: 855Ill-75-6

Location: Pike County, Illinois. T4S - R6W - Sec. 8 - WW160, SE40 - SE10 - 21 rds. N. of center of section and 160 feet west of center of section.

Vegetation and land use: Cornfield Slope and land form: 3-1/2 percent.

Brosion: Slight

Drainage: High imperfect to low moderately well.

Permeability: Moderate

Parent Material: 110 inches of Peorian losss.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 20, 1955.

Horison and Beltsville Lab. No.

**B23** 

T.

O to 8 inches. Very dark brown (10YR 2/2), silt loam, moderate fine, crumb structure.

551821 Friable.

8 to 15 inches. Very dark brown (10YR 2/2), silt loam with wormhole fillings of dark brown (10YR 3/3), weak, fine subangular blocky structure which breaks to a moderate, fine, crumb structure. Friable. 551822

15 to 18 inches. Dark brown to dark yellowish brown (10YR 3/3 to 4/4), silt loam with a few A3 551823 gray (10YR 5/1) specks when dry, moderate, fine, subangular blocky structure with a few weak,

fine, crumb peds. Friable.

18 to 22 inches. Dark brown (10YR 4/3), light silty clay loam with some very dark grayish brown (10YR 3/2) splotches, moderate, fine, subangular blocky structure. Friable. 551824

B21 22 to 25 inches. Dark brown (10YR 4/3), silty clay loam, mottled with a few fine prominent yellowish brown (10YR 5/4) mottles and coated with grayish brown and very dark grayish brown 551825 (10YR 5/2 and 3/2), moderate, fine to medium subangular blocky structure. Firm. Black iron

concretions.

25 to 30 inches. Dark brown (10YR 4/3), silty clay loss mottled with common, line, distinct vallowish brown (10YR 5/k) mottles and coated with light brownish to hale brown (10YR 6.5/2) R22 551826

mottles, strong, medium, subangular blocky structure. Firm. Black iron concretions.

30 to 36 inches. Yellowish brown (10TR 5/4), silty clay loam mottled with many, medium,

SOIL Muscatine silt losm

SOIL Nos. S55711-75-9 LOCATION Pike County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. \_\_\_\_551848 - 551855

		1B15						, Size cla	ss and parti	cle diamet	er (mm) 3A	i						
	i		Total	· ·	Γ			Sand		Si	lt .				382		rse fragm	ents 3
Depth	Horizon	Şand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II			1	2A2 >→ 2	2 - 19	19-
(In.)		(2-0.05)	(0.05 <u>–</u> 0.002)	( < 0.002	(2-1)	(1-0.5)	(0.5-0.25	(0.25-0.1	(0.1–0.05)	0.05-0.02	(0.02 <u>–</u> 0.002)	(0.2-0.02)	(2-0.1)		Cm		1	1
	ì	-	1 0.002)	1	<u>'</u>		! t. of << 2	mm	(		1 0.002)			1		Pct.		ct. et 76mm
0-7	Ap		76.4	19.7	-	0.7		0.8	1.6		37.1	41.2			1	_	1	Т
7-13	A1		72.1	24.8	-	0.5	0.6	0.6	1.4		37.2	36.5				-		
13-15 15-19	A3 B1	<del></del>	70.4	27.6	<b></b> -	0.4	0.5	0.5	0.7		36.8	34.4		1	ļ		-	╄
19-24	B21	1	66.2	31.6		0.3	0.4	0.4	0.7		36.7 36.1	30.8 31.0				-		
24-34	B22	1	68.3	30.3	-	0.3	0.3	0.3	0.6		36.5	32.5			l	1 [		1
34-42	B23	1	69.2	28.7	0.1	0.6	0.3	0.4	0.7		38.6	31.5				-		+
42-52	B3	1	67.6	30.7	0.1	0.3	0.2	0.3	0.8		37.6	30.9		1		-	l	
52-66	C.7	1	79.8	19.4	-	-	0.1	0.1	0.5		39.6	40.8				-	1	ļ.,
66-70	cs		86.9	12.0	-	0.1	0.1	0.2	0.7		36.0	51.7			1	-		İ
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	6Ala	1						Bulk densit	ty.	4D1	<u>w</u>	ater conte	nt		4C1		pH 1	,
Depth (In.)	Organic carbon	Nitrogen	C/N	1	Carbonate		•	4A1e	4A1h			4B1c	4B2	İ	]		8Clc	86
(111.)	Carbon	1			as CaCO <sub>3</sub>	as Fe		⅓bar	Oven dry	COLE		⅓ bar	15 bar		WRD		(1:1)	(1
	Pct.	Pct.			Pet.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct,	Pct.		in/in		KC	Н
0-7	1.52			<b>†</b>				1	1								<b></b> -	6
7-13	1.36	1 .			İ		ŀ											5
13-15	0.99			ļ				-										5
15-19 <sup></sup> 19-24	0.72							Ì										5
24-34	0.42				1		l		l ı					ļ			l	5
34-42	0.28			t														5
42-52	0.23				!			ļ										5
52-66	0,12			<u> </u>			ļ	<b>└</b> ─			ļ			ļ				16
66-70	0.07										ŀ							7
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				1		6Ша	ľ	EŲ.	0011			H	atios to cit		303		-	_
Depth (In.)	6N2d	602b	6P2a	6Q2a		Ext.	5A3a		Ext.			CEC	Ext.	15-bar	Ca/Mg		5C3	5
,,,,	Ca	Mg	Na	К	Şum	acidity	Sum		` AI			Sum	iron	water			Şum	NH,
	L	1 1		<u> </u>	meq/100 g		cations	I	ا _ا								cations Pct.	۱,
0-7	13.9	3.4	0.1	0.4			24.6								<del>                                     </del>		72	+
7-13	10.6	3.7	0.1	0.3			23.8				1						62	
13-15	13.3	4.7	0,1	0.4		9.1	27.6				L						67	L-
15-19	12.0	5.6	0.1	0.4		9.1	27.2	İ				[ ]					66	1
L9-24	12.0	6.1 8.0	0.1 0.2	0.5		8.7	27.4 29.8										68	1
24-34 34-42	13.7 10.4	5.3	0.2	0.4		7.5 6.9	23.2										75 70	1
2-52	15.5	10.0	0.2	0.4		6.1	32.2										8i	l
2-66	9.7	5.8	0.2	0.3		2.8	18.8	Ь—			ļ						85	┺
66-70	•												- 1					
T											<u> </u>							L.
		T			ion Analysis	7Alb-d		т				A 54	mole '	is cal-	areous	ı_		
Depth (In.)	Mt.	Chi.	Vm.	Mi.	Int.	Qtz.	KI.	Glbbsite								•		
			7A2	] !														
	<del>-</del>	<del></del>	X-ra			<del></del>	7/	43 <del></del>							chlorite, Vr . = quartz,			= mi
									[ ]									
		1 1						İ	I 1			Kolative	amounts:		t determine	d, dash =		HO,

ir. = trace, x = small, xx = moderate, xxx = abundant, xxxx = dominant.

Soil Type: Muscatine silt loam

Soil No.: S55Ill-75-9

Location: Pike County, Illinois. T4S - R3W - Sec. 16 - SW160 - SW40 - SE10 - 60 rds. E. of SW corner of

Sec. 16 - 7 rds. N. of center of gravel road.

Vegetation and land use: Rotation pasture Slope and land form: 3 1/2 percent N.

Erosion: Slight Drainage: Imperfect

Tymeshilian Modernto to moderntaly flor

Sampled by and date: Herman L. Wascher, George O. Walker, and Charles E. Downey. November 7, 1955.

Horizon and Beltsville Lab. No.

Ap 0 to 7 inches. Very dark grayish brown to very dark brown (10YR 2.5/2), silt loam, weak, fine, 551848 crumb structure. Friable.

Al 7 to 13 inches. Very dark brown (10YR 2/2), silt lowm, moderate to strong, very fine, sub-551849 angular blocky structure which breaks to a weak to moderate, medium, crumb structure. Friable.

A3 13 to 15 inches. Very dark grayish brown (10YR 3/2) with some dark yellowish brown (10YR 4/4), 551850 heavy silt loam, strong, fine, subangular blocky structure. Friable.

B1 15 to 19 inches. Dark yellowish brown (10YR 4/4), light silty clay loam, heavily coated with 551851 very dark grayish brown (10YR 3/2) strong, fine subangular blocky structure.

B21 19 to 24 inches. Yellowish brown (10YR 5/6), silty clay loss heavily coated with dark grayish brown (10YR 4/2) and mottled with many, fine, prominent light brownish gray (10YR 6/2) mottles, strong, fine to medium, subangular blocky structure.

B22 24 to 34 inches. Yellowish brown (10YR 5/6), silty clay loam mottled with many, fine, 551853 prominent light brownish gray (10YR 6/2) and a few fine, distinct reddish brown (5YR 4/4) mottles, moderate to strong, medium subangular blocky structure.

B23 34 to 42 inches. Strong brown (7.5YR 5/8), silty clay loam mottled with common, fine 551854 prominent light gray (10YR 7/1) and few, fine, distinct dark brown (7.5YR 3/2), weak, coarse, subangular blocky to very weak, coarse prismatic structure.

B3 42 to 52 inches. Yellowish red (5YR 4/6 to 5/8), light silty clay loam mottled with many, 551855 coarse, light gray (10YR 7/1) mottles, very weak, very coarse subangular blocky structure.

Cl 52 to 66 inches. Yellowish red (5YR 4/6 to 5/8), silt loam mottled with many, coarse 551856 prominent light gray (10YR 7/1) mottles.

66 to 70 inches. Yellowish red (5YR 4/7 to 5/8) silt loam mottled with common, coarse, prominent light gray (10YR 7/1) mottles. Calcareous.

Notes: Colors refer to moist soil.

SOIL Newart silt loam

SOIL Nos. S63II1-39-1 LOCATION Jackson, County, Illinois

SOIL SURVEY LABORATORY Lincoln, Nebraska General Methods: 1A, 1Blb, 2Al, 2B

LAB. Nos. <u>19333-19339</u>

May 16, 1966

		<b>-</b>	Total		1			Size clas	s and part	cle diamet I Si		а <u>ЗА</u> Т	1	Т			rse fragme	ntr 🗢 -
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine	<u> </u>	Int. III	Int, 🎞	l					
(in.)	MONZON		(0.05 0.002)				(0.5-0.25)			0.05-0.02			(2-0.1)			<b>&gt;</b> 2	2 - 19	1
		<b>-</b> -		· · · · · · · · · · · · · · · · · · ·	!		t of =< 2		!	·	( 0.002)					Pct.		:t. of _ 76mm
0 <b>-</b> 8 8-17	Ap Al	34.5 33.7	48.0 46.8	17.5 19.5	0.1	0.1	0.1	5.6	28.6	29.3	18.7	63.1	5.9			-		
17-21	A3	30.8	48.0	21.2	<u> </u>	0.1	0.1	4.0	29.5 28.6	31.1 34.3	15.7 13.7	64.2	5.2 2.2			_	l	
21-29	B21	34.6	44.4	21.0	-	0.1	0.2	1.8	32.5	30.7	13.7	64.7	2.1			-		
29-38 38-47	E22	25.9 57.0	55.6 30.3	18.5 12.7	-	0.1	0.2	4.2 14.8	21.4 12.0	41.8 23.7	13.8 6.6	67.0 <b>79.</b> 9	4.5			-		
47-58+	1102	10.8	67.8	21.4	-	0,1	0.1	1.1	9.5	38.4	29.4	48.8	1.3			-		
	6Ala	6Bla		T	Ì	602a		Bulk densit		4D1		Vater conte	int	-			pH <sub>E</sub>	
Depth	Organiç	Nitrogen	C/N		Carbonate		4Ala	4Ald			4B4	4Blc		4C1			_	8¢1
(In.)	a, b				as CaCO <sub>3</sub>	as Fe a	Field- State	1/3- Bar	Air- Dry	COLE	Field State		15- Bar	1/3-to				(1:
- 0	Pct.	Pct.		<b></b>	Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.	in/in.				
0-8 8-17	1.31 0.77	0.124 0.077	10			0.5		1.41 1.48		0.010	5.0	18.4 20.6	8.4 9.5	0.14 0.16				5.5 5.9
17-21	0.51	0.058	9	ļ <u>.</u>		0.8	1.55	1.44	1.56	0.028	9.9	22.8	10.7	ــــــــــــــــــــــــــــــــــــــ				6.0
21-29 29-38	0.38	0.048	8				1.53 1.52	1.43 1.43	1.54		10.1 11.0	21.8 22.9	10.5	0.16 0.18				5.9
38-47	0.15			ļ <u> </u>		0.7	1.48		1.48	0.014	7.0	13.6	6.5	0.10				5.9 6.0
¥7-58 <b>+</b>	0.19					0.9	1.46	1.38	1.50	0.028	16.6	25.5	12.1	0.18				5.7
		Extractat	le bases	a 5Bla		6H2a	Cat, Exch	Oap.a.				1			813	 	Base sat	uration
Depth	6N2a	602a	6P2a	692a		Ext.	5A3a	5Ala	KC1-						-		5C3	50
(ln.)	Ca	Mg	Na	К	Sum	<u>a</u>	Sum Cations	ин) оче	Ext. Al						Ca./Mg		Cations	
0-8	10.6	1.8	b.2	0.6	meg/100 g 13.2	6.0	19.2	16.2	$\rightarrow$		_	<b> </b>	ļ		5.9		Pet. 69	9c1
8-17	12.7	2.5	þ <b>.</b> 2	0.4	15.8	4.7	20.5	17.4							5.1		77	91
17-21 21-29	13.6 12.8	3.6	p.2 p.3			4.5 4.6	22.0 21.8	19.0 18.6						1	4.2 3.6		80	92
29-38	11.5	3.6	þ.2	0.5	15.8	4.2	20.0	17.4							3.2		79 79	92 91
38-47 47-58+	8.0 13.6		0.2 0.3	0.3		2.8 3.8	14,0 23.2	12.1 20.6							3.0		80 84	92
.1-251	2010	7.7		0.0	-7.4		۵,۰۰۰								2.8		04	94
	Ratios	to Ma	r 8 m															
P	1			1		a. 1	Determi	ned by	Soil	Survey	Labor	ratory	- Riv	erside,	Calif	ornia		
	NH <sub>I</sub> OAc CEC	Ext. Iron	15-Ba Water			ъ	lo kg/m	r⁴ to 5	8 inch	es. (	Method	1 6A)						
(in.)	CEC			1														
(in.) 0-8 8-17	0.92 0.89	0.04	0.48															
0-8 8-17 17-21	0.92 0.89 0.90	0.04 0.04	0.49 0.50															
0-8	0.92 0.89 0.90 0.88 0.94	0.04 0.04 0.04	0.49															

Soil type: Newart Silt Loam

Soil Nos.: 863 Ill-39-1

Location: Jackson County. Illinois. TSS. R5W. Sec. 36. NE 160. NE 40. SE 10. 450 feet east of road (ditch slone

Mississippi River.

Slope and land form: Level to nearly level; Mississippi River bottomland or low terrace.

Drainage and permeability: Somewhat poorly drained; moderately permeable.

Parent material: Alluvium

Described and sampled by: G. O. Walker, H. L. Wascher, W. D. Parks, C. C. Miles, October 21, 1963.

Horizon and Lab. Nos.

I II

Ap 0-8 inches, very dark brown (10YR 2/2 to 3/2) silt loam with some very fine sand; weak fine crumb LSL 19333 structure; very friable; abundant roots; pH 6.4; abrupt smooth boundary.

UIL 19396

Al 8-17 inches, very dark brown (10YR 2/2) to very dark grayish brown (10YR 3/2) silt loam; medium clods LSL 19334 breaking to weak medium crumb structure; friable; abundant roots; pH 6.4; clear smooth boundary. UIL 19397

A3 17-21 inches, very dark grayish brown (10YR 3/2) silt loam with common, medium, faint, brown (10YR 5/3) LSL 19335 to yellowish brown (10YR 5/4) mottles; weak fine crumb structure; friable; abundant roots; many worm UIL 19398 channels; pH 6.7; gradual smooth boundary.

B21 21-29 inches, mixed very dark grayish brown (10YR 3/2), brown (10YR 4/3), and pale brown (10YR 6/3) silt LSL 19336 loam; weak medium and coarse subangular blocky structure; friable; very thin discontinuous very dark grayish brown (10YR 3/2) coatings on aggregates; occasional very weak coarse prisms; many worm channels; abundant roots; pH 6.7; gradual smooth boundary.

B22 29-38 inches, mixed grayish brown (10YR 5/2), yellowish brown (10YR 5/4), and pale brown (10YR 6/3) silt LSL 19337 loam with a few light gray (10YR 7/2) mottles; weak coarse UIL 19400 subangular blocky structure to massive; friable; very thin patchy dark grayish brown (10YR 4/2) coatings; many worm channels; pH 6.7; abrupt wavy boundary.

IICl 38-47 inches, brown (7.5YR 4/4) loamy very fine sand with common medium distinct grayish brown (10YR 5/2) LSL 19338 mottles; massive; very friable to loose; pH 6.7; abrupt smooth boundary.

IIC2 47-58 inches, mixed light gray (10YR 7/2) and dark yellowish brown (10YR 4/4) stratified loamy very fine LSL 19339 and, loam, silt loam, and light silty clay loam with common fine distinct yellowish brown (10YR 5/6) wortles; massive within strata; worm channel coatings of very dark brown (10YR 2/2); very dark brown (10YR 2/2) iron concretions.

Remarks: Most areas of Newart silt loam have strata of light silty clay loam between 42 and 60 inches. Silt loam was predominant in the sample collected between 47 and 58 inches. Field pH was determined with Hellige-Truog kit. All colors are for moist conditions.

SOIL TYPE Reddick LOCATION Kankakee County, Illinois silty clay loam

SOIL NOS.

s57111-46-1

LAB. NOS. 6910-6917

666+++++106111064q+10		iBla	******************				UTION (in				***************	
NC DTU		VERY							[ <u>-</u> -		2A2	<b>T</b> CV********
DEPTH INCHES	HORIZON	COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			> 2	TEXTURAL CLASS
		2-1	1-0.5	0,5-0,25	0. 25-0. 10	0.10-0.05	0.05-0.002	< 0.002	0, 2-0.02	002-0002	<b>19mm</b>	<u> </u>
	Alp	0.5a	l.la	1.9a	6.2a	4.7a	52.5			31.4	Tr.	sicl
10-14	Al2	2.1b	1.3b	1.8ъ	5.7b	4.26	50.3		28.2	29.5		sicl
14-18	Bl.	1.1b	1.3b	1.9b	5.6b	4.Ob	50.4		27.3	30.1		sicl
18-24	B21	0.4b	1.0b	1.50	4.9b	ვ.8ъ	53.9		27.3	33.1	Tr.	sicl
24-30	B22	0.3b	0.9b	1.3b	4.Ob	3 <b>.1</b> b	56.2		26.0	35.5	Tr.	sicl
	<b>B</b> 23	0.50	0.9ъ	1.2b	4.Ob	3.9b	57•5		29.9	33.8	Tr.	sicl
37-44	C	1.8b	2.0b	2.6b	8.6ъ	4.3b	41.3	39.4	18.4	31.7	Tr.	sicl
44-60+	D	0.1b	0.4ъ	0.7b	1.9b	2.1b	46.8	48.0	10.2	39.8	-	sic
***********		<b>3697430112409</b> 2414	************		10141111111111111111111111111111111111		<b>10348</b> 14+14177111 <b>11107</b> 6	angreena		***************	**********	
	pН			MIC WY	TTER	Free	ELECTRI-	6Ela		<u>c</u>	WATER	CONTEN
8cla			6Ala	6Bla		Iron	CONDUC-	CoCOs	GYPSUM	Bulk	<u>c</u>	₫
			ORGANIC	NITRO-	C/N	Fe <sub>2</sub> 0 <sub>3</sub> %	EC×103	equiv-	me./100a.		Field.	;
	1:5	1:10	CARBON		C/N	_	MILLIMHOS PER CM	•	SOIL	sity	State	15-Ba
1:1			%	%			PER CM 625°C.	- %		g/cc	%	1/2
6.5			3.54	0.262	14			-	į	1.31	17.9	17.1
6.6			1.83	0.148	12			-		<u> </u>		17.5
6.8			0.69	0.063	11			-	į			16.6
7.0			0.42	0.043	10			-	İ			<b>1</b> 6.0
7.2	ļ į		0.31	_				-	Ī	1.40	14.4	16.3
7.5	l		0.24					-				13.9
7.7			0.32					-			16.2	11.6
7.7			0.47					12	İ	1.56	20.6	20.0
10951 9992 21955 11971 119	***************************************	1487773860768484848					************	<u></u>	<u>.</u>		***************************************	
ζ <b>Ä</b> ľa		EXTRAC		CATIONS			5C3	5Bla	5A3a	1		
CATION	6N/2b	602ъ	6на	6P2a	692a		Base	Sum	Sum	1		MOISTURE
CAPACITY	Co Co	Mg	н	No	к		Sat.% on Sum	Ext.	Ext. Ostions			AT SATU- RATION
NH <sub>L</sub> AC	; ;	milliequiv	;	1	ŧ .		שווים זוי	TOSES	hannang	7	ł	

Soil type: \* Reddick silty clay loam

Soil Not .: S57111-46-1

Location: Kankakee County, Illinois; 125 feet east of paved road and 50 feet south of northwest corner of NW10, NW40, SW160 of Section 5, T32N, R12E.

Classification: Humic Gley.

Natural drainage: Poor.

Native vegetation: Wet prairie. Present vegetation: Plowed field.

Climate: Humid temperate. Slope: O percent.

Erosion: None.

Elevation: Approximately 566 feet.

Parent material: 40 to 60 inches of outwash over silty clay loam Wisconsin till of Cary age.

Sampled by: J. E. Paschke and D. E. Hallbick, Soil Conservation Service, October 17, 1957.

Horizon and Lincoln Iab. Mmber

O to 10 inches. Black (10YR 1/1 moist) silty clay loam; weak medium granular structure; slightly firm 6910 when moist; boundary abrupt and smooth; pH is 6.5.

A12 10 to 14 inches. Black (10YR 2/1 moist) silty clay loam; moderate medium granular; slightly firm when 6911 moist; boundary clear and smooth; pH is 6.2; some black (10YR 1/1 moist) organic coatings.

14 to 18 inches. Dark grayish brown (2.5Y 4/2 moist) gritty silty clay loam; many fine faint yellowish brown (10YR 5/4 moist) mottles; moderate fine subangular blocky structure; firm when moist; boundary clear and smooth; pH is 6.0; some very dark gray (10YR 3/1 moist) organic coatings; thin discontinuous 6912 clay skins.

18 to 24 inches. Dark grayish brown (2.5Y 4/2 moist) silty clay loam; many fine faint yellowish **B**23 brown (10YR 5/4 moist) mottles; weak medium prismatic structure breaking to moderate fine to medium 6913 angular blocky; very firm when moist; boundary clear and smooth; pH is 6.5; thin discontinuous clay skins; some very dark gray (10YR 3/1 moist) organic coatings; few small iron-manganese concretions.

24 to 30 inches. Crayish brown (2.575/2 moist) silty clay loam with many medium distinct yellowish brown (10YR 5/8 moist) mottles; moderate medium prismatic structure breaking to moderate medium to B22 6914 coarse angular blocky; very firm when moist; boundary clear and smooth; pH is 7.0; thin discontinuous clay skins; some dark gray (10YR 4/1 moist) organic coatings; few small iron-manganese concretions.

30 to 37 inches. Gray (5Y 5/1 moist) heavy silty clay loam with many medium to coarse distinct to prominent yellowish brown (10YR 5/8 moist) and strong brown (7.5YR 5/8 moist) mottles; moderate medium prismatic breaking to moderate medium to coarse angular blocky; very firm when moist; boundary abrupt and B23 6915 wavy; pH is 7.8; few small iron-manganese concretions.

37 to 44 inches. Gray (N 5/ moist) silty clay loam with 6 or 7 pockets of loamy sand per square foot of vertical surface; many medium distinct yellowish brown (10YR 5/8 moist) mottles; same colors 6916 in sandy pockets; massive; firm when moist; boundary clear and smooth; pH is 8.0; many small ironmanganese concretions.

44 to 60 inches plus. Mixed yellowish brown (10YR 5/8 moist) and gray (N 5.5/ moist) heavy silty 6917 clay loam glacial till; massive; firm when moist; calcareous.

pH determined with Hellige-Truog Soil Reaction Kit. Water table was at 63 inches. The outwash over the glacial till is on the finer-textured end of medium-textured outwash.

SOIL TYPE \*Reddick LOCATION Livingston County, Illinois silty clay loam

SOIL NOS. S57 II1-53-2 LAB. NOS. 6926-6932

		l Bla	, :				UTION (in				,	
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURA CLASS
		2-1	1-0.5	0.5-0,25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0, 2-0.02	0.02-0.002	<19mm	<u> </u>
	Al Bl	0.1a 0.2a	0.5b 1.2b	9.2b	10.91 34.01	10.la	41.7 24.6	40.1 20.7	<b>14.</b> 3 41.5	36.3 16.7	Tr. Tr.	sic/si scl
	B21	0.4a	1.1b	9.2b	34.91		23.9	21.2	35.1	16.4	Tr.	scl
	B22	0.6a	0.8a			10.7a	23.7	19.8	37.9	15.2	Tr.	fsl
	C1	O.la		14.la		14.0a	6.4	7.3	45.3	3.7	Tr.	lfs
,	cs [	0.6a		24.6a	58.2		1.9	2.8	32.0	1.0	Tr.	8
1-47+	D	1.6c	1.50	1.1c	2.50	2.7c	56.1	34.5	17.2	43.0	Tr.	sicl
******************************	рН	<b>1966768888</b> 11812979		NIC MA		Free	ELECTRI-	быа.	######################################	đ	WATER	CONTEN
Cla			6Ala	6Bla	]	Iron	CONDUC-	6-65	CABerra	Bulk	₫	e
Į	_		ORGANIC			Fe <sub>2</sub> 03%	EC × 103	eguiv-	GYPSUM me./100g.		Field	-
1:1	1;5	1:10	CARBON	GEN %	C/N		MILLIMHOS PER CM #25°C.	alent %	SOIL	sity g/cc	State %	15-Be
. 3			4.05	0.344	12			_		1.28	21.1	21.9
.6				0.112	10			_				9.6
.8				0.055	10			-		1.51	9.6	8.5
.8				0.032	10			<u> </u>				7.4
3.0			0.21					_		1.54	16.5	2.5
3.1			0.05	1	į		Ì	-			•	1.0
7•9			0.92					24		1.76	11.9	13.8
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Ala"	L.a		TABLE			<u> </u>	Base	Sum	Summa Sum	1	!	
CATION XCHANGE	6№b	602b	oma	OFZA	O W∠a.		Sat.%	Ext.	Ext.	ĺ	l	MOISTUR AT
APACITY	Co	Mg	н	No	K		on Sum		<u> </u>	4	ļ	SATU- RATION
VH <sub>lt</sub> Ac		: milliequiv	: raients per	100g. soi	i <del></del>		Cations		00 g	1		%
1.7	23.1	8.1	8.7	I _	0.7	*-	78	.i	40.6	Ĭ		!
·	14.1	4.8	2.0	_	0.3	1	90	19.2	21.2	į	ļ	į
	14.3	4.4	0.4	_	0.3		98	19.0	19.4		İ	
7	11.7	4.2	0.8	-	0.3	1	95	: 5	17.0	1		1
	4.8	2.2	0.4	-	0.1		95	7.1	7.5		1	į
1.4	1.6	1.0	0.8	-	-	į	İ	2.6	3.4		l	1
9.8		6.9	0.4	-	0.2						Ì	į
. Few	smoot	h darl	brown	to b	lack co	mer. (F	e-Mn?)					-
. Few	smoot	in darl	g brown	to b	BRCK CO	mer. (E	e-Mn?)	ALBO 1	ew Cal	103 601	er.	J
e. Com	mon su	OOTH I	mgnt i	orown 1	NO DIEC	ak concr	(Fe-M	uştj A∟ NoA ¹	PJC-2	TO DE	S CONC.	li God
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i. Det s e. Det	ermine	d by t	hiver	ity o		nois. F	dchards	, L. A.	and	<b>e</b> aver	, L. R	•
l. Det S e. Det	ermine	d by t	hiver	ity o	f 11111 35 191		dchards	, L. A.	and '	<b>e</b> aver	, L. R	•

Soil type: "Reddick silty clay loam

Soil Nos. : S57111-53-2

Mos. . 50,12-3-4. Whiterestry of Illinois Inhoratory Nos.: 18052 through 18058. Icoation: Livingston County, Illinois; 380 feet south of east quarter corner on west side of dirt road, SEL60,

NEMO, NEMO of Section 25, T30N, RSE. Classification: Hamic Gley. Natural drainage: Poor. Native vegetation: Wet prairie. Present vegetation: Eluegrass. Hamid temperate. Climate: Slope: 1/2 percent to south

Erosion: None.

Elevation: 640 feet approximately.

want metantial. MO to 60 inches of least outwash over calcaracus silty clay least Waccossin till of Carv age.

Horizon and Lincoln lab. Number

0 to 9 inches. Black (10YR 1/1 moist) silty clay loam; moderate fine to medium subangular blocky structure; firm when moist; boundary clear and smooth; pH is 6.5; roots abundant. 6926

9 to 14 inches. Very dark grayish brown (2.5Y 3/2 moist) light clay loam; moderate medium subangular 6927 blocky structure; very firm when moist; boundary clear and smooth; pH is 7.8; roots common; abundant worm channels filled with Al material.

4 to 21 inches. Dark grayish brown (2.5Y 4/2 moist) clay losm with few fine faint yellowish brown **B**21. 6928 (10YR 5/4 moist) mottles; moderate medium to coarse prismatic structure breaking to weak medium subangular blocky; firm when moist; boundary clear and smooth; pH is 7.8; some black (10YR 2/1 moist) to very dark grayish brown (2.5Y 3/2 moist) organic coatings; many black (10YR 2/1 moist) worm channel fillings; roots common.

21 to 25 inches. Mixed dark grayish brown (2.5Y 4/2 moist) and yellowish brown (10YR 5/6 moist) clay 6929 losm; spots of sandy clay losm occur in this horizon; massive; friable when moist; boundary abrupt and wavy; pH is 7.8; few black (10YR 2/1 moist) worm casts; roots common.

25 to 34 inches. Sandy loam with loamy fine sand bands and pockets; banded colors of dark grayish brown (2.5Y 4/2 moist) 60 percent, yellowish brown (10YR 5/6 moist) 20 percent, and black (10YR 2/1 6930 moist 20 percent; massive to single grain; boundary abrupt and wavy; pH is 7.8; roots few; very few worm casts.

34 to 41 inches. Very pale brown (10YR 7/4 moist) loamy fine sand with many medium faint, 10YR 5/8 moist, mottles; single grain; very friable when moist; boundary abrupt and smooth; pH is 7.8. 6931

41 to 47 inches plus. Mixed gray (N 6/ moist), yellowish brown (10YR 5/6 to 5/8 moist), and olive brown (2.5Y 4/4 moist) silty clay loam glacial till; massive; very firm when moist; calcareous; 6932 many small rocks.

Remarks: pH determined with Hellige-Truog Soil Reaction Kit. Krotovinas start in B21 (14 inches) and extend to bottom of C horizon (41 inches). A matted dightly decomposed layer of grass 1½ inches thick lies on the surface. The outwash over the till in this soil is ideal for medium-textured outwash.

	SOILKC						SO							County,		5		
	SOIL SURVE	Y LABORAT	ORYBe	Itsville, N	Maryland						LAI	B. Nos	551795	- 55180	3			
		T	1B1b							ss and partic								
			1810	Total			• • • • • • • • • • • • • • • • • • • •		Sand	ss and partic	sie dramei S	ilt ilt			3B		oarse fragme	nts 3BI
	Depth	Herizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int, II			2A2	7 - 19	19-76
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Soil Type: Rozetta silt loam

Soil No.: S55Ill-1-3

Location: Adams County, Illinois. T3S - R6W - Sec. 13 - NW160 - SW 40 - SW 10 - 36 rds. E. of Gr. road

and 15 rds. N of 1/2 line fence about middle of ridgetop. Vegetation and land use: Pasture sod - Lespedeza and grass.

Slope and land form: 4 percent

Erosion: Slight

Drainage: Moderately well Permeability: Moderately slow

Parent Material: 75 inches of Peorian losss over buried soil of gritty losm surface and clay losm subsoil.

Physiography: Remnant of Illinoian outwash plain.

Sampled by and date: Herman L. Wascher, George O. Walker, Charles E. Downey. October 18, 1955.

Horizon and Beltsville Lab. No.

O to 5 inches. Dark grayish brown (10YR 4/2) silt loam, specked with dark reddish brown Aρ 551795 (5YR 3/2), weak, medium platy structure, friable. Many roots and worm casts.

5 to 10 inches. Brown (10YR 5/3) with some yellowish brown (10YR 5/6), silt loam, very weak, 551796 medium subangular blocky structure, friable. Many roots.

В1 10 to 13 inches. Yellowish brown (10YR 5/6), light silty clay loam, weak, medium, subangular 551797

blocky structure, friable.

B21 13 to 19 inches. Yellowish brown (10YR 5/4) silty clay losm, slightly coated with grayish brown to brown (10YR 5/2.5), moderate, medium, subangular blocky structure, firm. Many roots. 551798

19 to 25 inches. Dark brown to dark yellowish brown (8YR 4/4) silty clay loam, highly coated R22 with light brownish gray (10YR 6/2), moderate to strong, medium subangular blocky structure, 551799 firm. Few roots.

25 to 35 inches. Dark brown to dark vellowish brown (SYR L/L) silty clay loss mottled with

raman an

SOIL SURVEY LABORATORY Lincoln, Nebr. March 1964 SOIL TYPE Rozetta LOCATION InSalle County, Illinois silt loam

SOIL NOS. \$61-II1-50-2 LAB. NOS. 16558-16567

<u> </u>	# 1694144	1Blb		PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	r cent)	<u>"3A1"</u>	
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	Q02-Q002	
0-5	Al	-	0.2a	0.2a	0.4a	2.3	81.6	15.3	41.1	43.0	_
5-11	A2	Tr.a	0. <b>1</b> a	0.2a	0.2a	1.3	80.9	17.3	40.0	42.3	-
11-17	B1	-	0.la	0.la	0.3a	1.9	73.8	23.8	36.4	39.5	-
17-23	B21	-	0.la	0.la	0.2a	1.9	65.3	32.4	32.9	34.4	-
23-29	B21	-	0.la	0.la	0.2a	1.9	65.1	32.8	36.2	30.8	-
29-35	B22	-	0.la	0.la	0.3a	2.8	66.1	30.6	38.7	30.4	-
35-40	B23	-	Tr.a	0.la	0.3a	3.2	67.8	28.6	40.9	30.3	-
40-47	B3	-	Tr.a	Tr.a	0.2a	3.4	68.9	27.5	42.3	30.1	-
47-59	Cl		-	Tr.a	0.1a	2.6	71.1	26.2	44.5		-
59-66+	i Cl	L		Tr.a	0.2a	3.8	70.4	25.6	445	29.8	

Soil type: Rozetta silt loam

Soil Nos.: \$61111-50-2
University of Illinois Laboratory Nos.: 18896 through 18905
Location: Laballe County, Illinois; 123 feet south of gravel road along fence, then 45 feet due west to sampling site, NML60, NE40, NE10, NE22 of Section 11, T34N, RIE.
Classification: Gray-Brown Podzolic.

Natural drainage: Moderately well. Native vegetation: Forest. Present vegetation: Bluegrass.

Climate: Humid temperate.

Slope: Base of 5 percent slope. Erosion: 7 to 14 inches topsoil remaining.

Elevation: 655 feet.

Parent material: Deep loss over 5 feet thick.

Described by: J. D. Alexander and L. E. Tyler, October 23, 1961.

Horizon and Lincoln Lab. Number

0 to 5 inches. Very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium crumb structure; 16558 friable; lower half of this horizon has worm channels filled with A2 material; abundant roots; pH 6.0; clear smooth boundary.

5 to 11 inches. Brown (10YR 4/3 to 5/3) silt loam; weak thin and medium platy structure breaking to 16559 moderate medium granules; friable; numerous worm channels filled with Al material; abundant roots; pH 5.9; clear smooth boundary.

11 to 17 inches. Yellowish brown (10YR  $^{4}/^{4}$  to  $^{5}/^{4}$ ) heavy silt loam; moderate fine subangular blocky structure; friable; ped exteriors are brown to dark brown (10YR  $^{4}/^{3}$ ) and have faint grainy coatings 16560 evident in moist condition; upper 2 inches have worm channels filled with Al material; common roots; pH 6.0; clear smooth boundary.

R21 17 to 29 inches. Brown to dark brown (10YR 4/3) medium silty clay loam; strong medium subangular 16561(17 to blocky structure breaking to strong very fine angular blocks; firm; some grainy coatings evident in 23 inches) moist condition; some brown (7.5YR 4/4) clay films; common roots; pH 5.5; clear smooth boundary. 16562(23 to 29 inches)

29 to 35 inches. Yellowish brown (10YR 5/4) medium clay loam with common fine faint brown (10YR 5/3) 16563 to pale brown (10YR 6/3) and few fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; moderate medium subangular blocky structure breaking to moderate fine and very fine angular blocks; firm; some grainy coatings evident in moist condition; some silt and clay coatings discontinuous on all surfaces; common fine iron-manganese concretions; pH 5.4; clear smooth boundary.

35 to 40 inches. Mixed brown (10YR 5/3) to yellowish brown (10YR 5/4), grayish brown (2.5Y 5/2), and light brownish gray (2.5Y 6/2) light to medium silty clay loom with many fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; weak to moderate medium and coarse angular blocky structure; firm; **B**23 16564 discontinuous silt coatings on vertical surfaces; discontinuous clay coatings of brown (10YR to 7.5YR 4/3 to 4/4) on vertical surfaces; common fine iron-manganese concretions; pH 5.4; clear smooth boundary.

40 to 47 inches. Grayish brown (2.5Y 5/2) to light brownish gray (2.5Y 6/2) light silty clay loam with many fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; weak coarse subangular and angular blocky structure; firm; brown (10YR 5/3) to yellowish brown (10YR 5/4) silt coatings discontinuous on vertical surfaces; dark brown (7.5YR 4/2) thin to medium clay coatings discontinuous on vertical surfaces; common fine iron-manganese concretions; pH 5.5; diffuse smooth boundary. B3 16565

47 to 66 inches. Grayish brown (2.5Y 5/2) to light brownish gray (2.5Y 6/2) silt losm with common 16566(47 to fine distinct strong brown (7.5YR 5/6 and 5/8) mottles with horizontal elongation; massive; friable; 59 inches) a few large vertical cleavage faces have dark brown (7.5YR 3/2) patchy thin clay coatings on vertical 16567(59 to surfaces; a few worm channels filled with translocated clay; pH 6.7. 66 inches)

Remarks: Six 3-inch soil cores were taken in each of the following horizons: Al, 1 to 4 inches; A2, 6 to 9 inches; B21, 23 to 26 inches; and C, 50 to 53 inches. This profile is located near the base of a 5 percent slope. pH determined with Hellige-Truog pH kit in the field.

Soil Type: Rushville silt loam.

Soil No.: S48I11-65-1

Location: Menard County, Illinois. T. 18 N., R. 7 W., Sec. 23, SW 1/4, NE 40, NE 10, SE corner, 100 feet

west of the road.

Vegetation and land use: Hay

Slope and land form: 1/2 percent to SW.

Sampled by and date: J. R. Fehrenbacher and E. P. Whiteside. August 9, 1948.

Horizon and Beltsville Lab. No.

0 to  $6\frac{1}{2}$  inches. 10YR 5/2 moist (10YR 7/1.5 dry). Crushed, 10YR 4/2. Silt loam. Weak Ap 481377 crumb structure. Friable.

 $6\frac{1}{2}$  to 11 inches. 10YR 6/2 to 6/3. Silt loam. Platy in upper part 1/16-1/8 inch. Weak 42 481378 crumb to med. granular in lower part, 1/8-3/8 inch. Some coatings of 10YR 5/2. Frieble.

11 to 14 inches. 10YR 6/3-5/3. Light silty clay loam. Fine subangular blocky 1/8-3/8 inch. 481379 Moderate coatings of 10YR 6/2-7/2. Moderately sticky.

14 to 20 inches. 10YR 6/2 + 6/3 + 2.5Y 6/2 to 6/3, and some 10YR 6/6 splotches. Silty clay. Blocky 1/4-3/4 inch. Moderate coatings of 10YR 6/2 and 10YR 4/1. Very sticky. B21 481380

B22 20 to 26 inches. Same as horizon above.

481381

B31 26 to 30 inches. 2.5Y 6/2 + 5/3 + 6/4 and 10YR 6/6 + 6/8. Silty clay loam. Irregular 481382 blocky 1/4-1 inch. Coatings of 10YR 6/2 + 10YR 4/1 are heavier than in B2. Moderately sticky.

B32 481383 30 to 34 inches. Same as horizon above.

34 to 39 inches. 2.5Y 6/4, 60 percent + 7.5YR 5/8, 30 percent + 2.5Y 5/2, 10 percent. Silt 481384 Massive. Friable,

39 to 43 inches. Same as horizon below. Not Sampled

43 to 47 inches. 10YR 7/1 - 2.5Y 7/2 = 80 percent, 10YR 5/8, 20 percent. Silt. Massive or single grain. Very friable. Calcareous, fossiliferous. 481385

Notes: Brownish black concretions, 10YR 2/2, are present throughout this profile.

SOIL TYPE Sable LOCATION Marshall County, Illinois silty clay loam

SOIL NOS. S57111-62-1 LAB. NOS. 6881-6887

****************		l Bla					UTION (in			3A1		, 1935 1755 1555 1555 1555 1555 1555 1555 15
DEPTH INCHES	HORIZON	VERY COARSE SAND	COARSE SAND	MEDIUM \$AND	FINE SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	TEXTURAL CLASS
		2-1	1-0.5	0.5-0,25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	002-0002	<19mm	
0-8	All.	0.6a	0.3b	0.4b	0.6ъ	1.2b	60.6	36.3	30.2	31.9	Tr.	sicl
>	Al2	0.4c	0.5c	0.4c	0.70	1.0b	60.4	36.6	30.2	31.5	Tr.	sicl
15-21	Bl	0.44	0.5đ	0.6c	0.9c	0.96	60.1	36.6	29.0	32.4	Tr.	sicl
_	B21	0.8a	0.7 <b>a</b>	0.4d	0.60	0.96	64.0	32.6	28.2	37.0	Tr.	sicl
9	<b>B</b> 22	0.44	0.4a	0.3d		1.0b	67.3	30.0	31.1	37.5	•	sicl
	B3	0.2d	0.6d	0.4d	0.4d	1.35		26.8	35.3	36.5		sil
49 +	С	-	0.5c	0.60	0.9c	1.8b	71.4	24.8	37.7	35-9	Tr.	sil
						:						
94 16 26 89 7 1 <del>1 7 6</del> 2 7 92 7 4 9 4	housessenis pH	H41646644111117474	•	NIC MA		Free	ELECTRI- CAL	6Ela	<b>1</b> 2554 <b>1</b> 4141411164 <b>91</b>	е	I	CONTENT
8cla	[		6Ala	6Bla		Iron	CONDUC-		a v be	Bulk	e	f :
			ORGANIC	NITRO-		Fe <sub>2</sub> 0 <sub>3</sub> %	CONDUC- TIVITY EC × 103	CaCO3 equiv- alent	GYPSUM me./100g.	Den-	Field-	-
	1:5	1:10	CARBON		C/N		MILLIMHOS	alent	SOIL	sity	State	15-Bar
1:1			%	%		*****	PER CM #25°C.	%		g/cc	<b>%</b>	%
7.3				0.409	12			-		1.15	29.2	23.1
7.1				0.305	10			-				21.6
<u>7•5</u>				0.148	11			-				18.9
7.7				0.050	10			-			19.4	16.0
7.7			0.32					-		1.43	20.8	15.2 14.8
7.6 7.6			0.24					<b>!</b>		1.42	29.8	14.6 11.5
1.0			V.24					_		4.46	29.0	11.7
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5Ala	<u> </u>	EXTRAC	TABLE (	CATIONS	5Bla		5C3	5B1a	5A3a	1		
CATION EXCHANGE	6 <b>N</b> 2b	602b	6нда	6P2a	692a		Base	Sum	Sum	ļ		MOISTURE AT
CAPACITY	Co	Mg	н	No	к		Sat.% on Sum	Ext. Bases	Ext. Cations		İ	SATU- RATION
NH <sub>l</sub> Ac	<b> </b>	milliequiv	: olents per	100g. soli			Cations		100g			76
43.9	34.2	13.1	3,8		0.6			1.	51.7			
42.6	31.8	11.1	5.4	0.1	0.4				48.8	į		
	26.8	11.0	3.3	0.1	0.4		92	: · ਦਾ · ·	41.6	Ī	İ	
28.5	19.0	9.6	1.7	0.1	0.4		94		30.8		ļ	
	17,1	8.9		0.1	0.5				27.0		1	

Soil type: Sable silty clay loam Soil Nos.: S5/III-62-1
University of Illinois Laboratory Nos.: 18029 through 18035.
Location: Marshall County, Illinois; 215 feet south of half-line fence on west side of gravel road in edge of cultivated field, SEL60, NEWO, NEIO of Section 1, T29N, R2W. Classification: Ramic Gley. Natural drainage: Foor. Native vegetation: Wet prairie. Present vegetation: Bluegrass. Climate: Humid temperate. Slope: 1/2 percent to north. Erosion: None. Elevation: Approximately 685 feet. Parent material: More than 60 inches of Peorian loess. Sampled by: J. E. Paschke, D. C. Hallbick, N. E. Barnes, and G. O. Walker, Soil Conservation Service; H. L. Wascher and J. D. Alexander, University of Illinois, October 15, 1957. Horizon and <u> Iincoln</u> Lab. Number 0 to 8 inches. Black (10YR 1/1 moist) light silty clay loam; moderate fine granular structure; friable when moist; boundary diffuse and smooth; pH is 6.8; many roots. ננג 6881 8 to 15 inches. Black (10YR 1/1 moist) silty clay loam; moderate very fine to fine subangular blocky A12 6882 structure; friable when moist; boundary gradual and smooth; pH is 7.0; many roots. 15 to 21 inches. Black (10YR 2/1 moist) heavy silty clay loam to light silty clay; moderate fine sub-6883 angular blocky structure; firm when moist; boundary clear and wavy; pH is 8.2; roots and root channels common. 21 to 30 inches. Dark gray (5Y 4/1 moist) heavy silty clay loam; moderate medium subangular blocky B21 6881 structure with a tendency toward weak fine prismatic; firm when moist; boundary gradual and smooth; pH is 8.0; few small iron-manganese concretions; root channels common. 30 to 41 inches. Gray to dark gray (N 4.5/ moist) silty clay loam; common fine and faint yellowish brown (10YR 5/6 moist) mottles; moderate medium prismatic structure breaking to moderate medium 6885 blocky; firm when moist; boundary diffuse and smooth; many filled root channels; pH is 8.2. 41 to 49 inches. Gray to dark gray (N. 4.5/ moist) light silty clay loam; common fine distinct yellowish brown (10YR 5/8 moist) mottles; weak coarse blocky; firm when moist; boundary diffuse and B3 6886 smooth; pH is 8.0; few root channels. 49 inches plus. Gray to dark gray (N 4.5/ moist) heavy silt loam; many fine distinct yellowish brown ( $10\underline{YR}$  5/8 moist) mottles; massive; firm when moist; pH is 8.0; few root channels. 6887 (10.<u>10)</u> Brass iii

noticed in the E21 and extend in a more or less vertical direction to sampling depth at least. They range from  $1\frac{1}{2}$  inches to 2 inches in diameter and there are about 3 per square foot in horizontal cross section. Loes extends to 80 inches. Sandy-silt loem mixed outwash material from 80 to 90 inches. Calcareous loam till is encountered at 90 inches and extends downward.

SOIL Sable silty clay loam

SOIL Nos. S48I11-65-3 LOCATION Menard County, Illinois

SOIL SURVEY LABORATORY \_\_\_Beltsville, Maryland

LAB. Nos. 481394 - 481399

	T	1B1b							s and parti			<u>.</u>					,	
	j		Total	,	i			Sand		Şii	lt				3B2		rse fragme	nts 3B
Depth	Horizon	Sand	Sift	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II				2A2 >- 2	2 - 19	19-7
(ln.)		(2-0.05)	(0.05-	( < 0.002)	coarsa (2–1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(Q.1-0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)		Cm		1	t. of
		l	0.002)	I	1 ' ' '	Pc1	l . of << 2 :	nn			1 0.002)	'		]	i	P¢t.		76mm
0-8	Al	1.9	65.7	32.4	T -	0.1	0.1	0.2	1.5	30.0	35.7	31.6	0.4	1		Tr.		
8-16	Al	1.7	63.3	35.0	0.2	0.1	0.1	0.2	1.1	29.3	34.0	30.5	0.6			-		
16-21	A3	2.4	64.1	33.5	0.4_	0.4	0.1	0.2	1,3	29.0	35.1	30.4	1,1		ll		<u> </u>	↓
21-26	B2	2.8	65.3	31.9	0.6	0.5	0.2	0.2	1.3	30.5	34.8	31.9	1.5			-		
26-34	B2	2.4	66.0	31.6	0.1	0.2	0.2	0.3	1.6	31.6	34.4	33-3	8.0	1		-		1
34-40	C1	3.2	65.7	31.1	0.5	0.6	0.3	0.5	1.3	30.0	35.7	31.6	1,9					
	T	T		T				Bulk densit	y.	4D1	٧	later conte	nt		401		pН	
Depth	6Ala Organic	Nitrogen	G/N		Carbonate	Ext. iron		4Ale	4A1h	) *DI		481c	482	]	] **`` [		8CIc	8C1a
(In.)	carbon E.	Moogan	J 3/11		as CaCO <sub>3</sub>	as Fe		a. ⅓ bar	Oven dry	COLE		≯ bar	15 bar		WRD		(1:1)	(1:1)
	Pct.	Pct.			Pct,	Pct,	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		in/In		KCI	H <sub>2</sub> 0
0-8	2.7	1		1			T	1.43			1		- · · · · ·				<u> </u>	6.5
8-16	2.7					1		1.41					1		[			6.4
16-21	l i.i	<u> </u>		<u> </u>	ļ			1.51							L			6.8
21-26	0.7					l	1	1.48		ł								6.9
26-34 34-40	0.5	1						1.45		l	1			ļ				7.4
		Extractal	ble bases	5B1a		бЕЦа		EC	6G1d			,	tatios to cl	ay	8D3		Base sa	turation
Depth	6N2d	602b	6P2a	6Q2a		Ext.	Į				1				اء		503	5C1
(in.)		1	•			1	5A3a		Ext.		1	CEC	Ext.	15-bar	Ca/Mg			
` '	Ca	Mg	Na	К	Sum	acidity	Sum cations	1	AI	1		Sum	iron	water			Sum cations	NH <sub>4</sub> OA
	L	1	1	·	i meg/ <u>100</u> (		Cadons	·	<u> </u>	i				l			Pct.	Pct.
0-8	31.9	9.2	0.2	0.6	T	6.3	48.2	T	Γ .		1		<u> </u>	1	3.5		87	
8-16	23.4	11.0	0.2	0.4		7.5	42.5					1			2.1		82	İ
16-21	18.5	9.4	0.1	0.4	↓	5.8	33.5	<u> </u>	<b></b>	<u> </u>	<b>↓</b>	ļ	<u> </u>	↓	2.0		85	1
21-26	15.4	8.5	0.2	0.4		3.9	28.4		}						1.8		86 90	
26-34 34-40	14.9	8.6 9.3	0.4	0.4	1	2.8	27.1					ŀ	}		1.7		94	
34-40	14.0	7.3	0.4			1.0	-/-										,-	
	1	_		Clay Frac	tion Analysi	is 7Alb-d	_	1	,	4								
Depth (In.)	Mt.	Çhl.	Vm.	Mi.	int.	Qtz.	KI.	Gibbsite										
	-	1	7A ———— X-r		<del>                                     </del>	<del>`                                     </del>	<b></b> 7	A3	-						- chiorite, Vn z. = quartz,			→ mica,
				ļ	ļ			ļ <u></u>	ļ						t determined oderate, xxx			
													etermi 11inoi		s by Ur	nivers	ity o	f
				T -		ļ												

Soil Type: Sable silty clay loam.

Soil No.: 848I11-65-3

Location: Menard County, Illinois. T. 18 N., R. 7 W., Sec. 27, SW 1/4, NW 40. 190 feet E and 60 feet S of NW corner of field.

Vegetation and land use: Pasture

Sampled by and date: B. W. Ray, M. M. Mortland, and J. B. Fehrenbacher. August 10, 1948.

Horizon and Beltsville Lab. No.

0 to 8 inches. 10 YR 2/1. Silty clay loam. Granular structure 1/16-1/4 inch. Sticky. A1 481394

8 to 16 inches. Same as horizon above. A1 481395

16 to 21 inches. 10 YR 3/1 + some 10YR 5/3 mottling. Silty clay loam. Granular to subangular blocky 1/8-1/2 inch. Sticky. A3 481396

21 to 26 inches. 10YR 5/2 + 6/6 + some 10YR 3/1. Silty clay loam. Subangular blocky to

481397 blocky, 1/4-3/4 inch. Hint of prismatic arrangement. Sticky.

26 to 34 inches. Same as horizon above.

481398

34 to 40 inches. 10YR 5/1 + 6/6 + some 10YR 3/1, 5/8, and 7.5YR 5/8. Light silty clay loam. Nearly massive. Calcareous. Soft iron-manganese concretions are most numerous in this

481399

horizon. Sticky.

Notes: Munsell notations are of the moist colors of freshly broken fragments.

This profile was moist throughout when sampled. Water stood in the bottom of the excavation.

SOIL SURVEY LABORATORY Lincoln, Nebr. September 1958

SOIL TYPE Sable LOCATION Warren County, Illinois silty clay loam

SOIL NOS. S57111-94-1 LAB. NOS. 6865-6872

1 <b>9705</b> 5+++++677354162 <b>86</b> 630 5 7	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 <b>B</b> la		PARTI	CLE SIZ	E DISTRIB	WTION (in	пап.) (ре	r cent)	<u>3A1</u>	************	77121119181 <del>01</del> 1177777
DEPTH		VERY				VERY					2A2	TEXTURAL
INCHES	HORIZON	COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	FINE SAND	SILT	CLAY			> 2	CLASS
		2-1	1-0.5	0.5-0.25	0.25-0.10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.02	0.02-0.002	<19mm	)
0-7	Alp	O.la	0.la	- a.	0.la	0.9a	67.8		35.9	32.9	-	sicl
7-19	A12	0.la	0.la	- a.	0.la	0.8a	66.3	32.6	35.4	31.8	-	sicl
19-24	A3	1.3b	0.9b	0.3b	0.4ъ	1.0a	63.9	32.2	34.8	30.3		sicl
24-29	Bl	1.1b	0.9ъ	0.3b	0.45	1.0a	65.3	31.0	34.5	32.0	-	sicl
29-38	<b>18</b> 52	0.2b	0.4b	0.3b	0.46	1.3a	68.8	28.6	36.0	34.3	-	sicl
38-47	<b>1</b> 33	0.36	0.56	0.1b	0.3b	1.3a	70.9	26.6	36.2	36.2	-	sil
47-59	C21	_	0.1b	0.1ъ	0.2ъ	0.8a	74.7	24.1	37.8	37.8	-	sil
59-71+	C22	-	0.2ъ	0.2b	0.2b	0.9a	76.9	21.6	38.5	39.4	-	sil
							Í					
 	рH		ORG/	NIC MA	TTER	Free	ELECTRI-	6Ela		c	WATER	CONTENT
8cia			6Ala	6Bla		Iron	CONDUC-	C-CO-	GYPSUM	Bulk	c	₫
			ORGANIC		- 4.	Fe <sub>2</sub> 0 <sub>3</sub> %	TIVITY EC×103	equiv-	me./100g.	Den-	Field	-
	1;5	1:10	CARBON	GEN	C/N		MILLIMHOS PER CM	alent	SOIL	sity	State	15-Bar
1:1			. %	%			PER CM 925°C.	%		g/20.	%	
· <del></del>	- '	-				-		-	-		-	, - ,

Soil type: Sable silty clay loam
Soil Nos.: 957II1-94-1
University of Illinois Laboratory Nos.: 18021 through 18028.
Location: Warren County, Illinois; 97 feet west and 39 feet north of southeast corner of SE10, NEWO, NEMO of Section 14, 19N, R3W, in a cultivated field.
Classification: Rhumic Glay.

Natural drainage: Poor.

Native vegetation: Wet prairie.

Present vegetation: Soybeans.

Climate: Rumid temperate.

Slope: O percent. Prosion: None.

Elevation: Approximately 733 feet.

Sampled by: L. J. Bushue, R. H. Jordan, and D. E. McCormack, Soil Conservation Service; R. T. Odell, University of Illinois, October 14, 1957.

Horizon and Lincoln

Iab. Number

Alp 6865 O to 7 inches. Black (10YR 2/1 moist) silty clay loam; moderately developed fine to medium crumb to weakly developed fine to medium granular in upper part, grading to moderately developed medium to coarse platy in lower part; moderately friable when moist; boundary to horizon below is abrupt and smooth;

pH 18 5.2.

7 to 19 inches. Black (10YR 2/1 to 2.5Y 2/1 moist, 10YR 2/1.5 crushed) silty clay loam; strongly developed medium granular to moderate very fine angular blocky structure; slightly firm when moist; A12 6866

clear smooth boundary; many worm casts; somewhat vesicular; pH is 5.5.

19 to 24 inches. Very dark gray (10YR 3/1 moist) heavy silty clay loam; mottles are common, fine, and faint very dark grayish brown (10YR 3/2 moist); moderate very fine angular blocky structure; firm when moist; clear smooth boundary; common brown to dark brown (7.5YR 4/4 moist) to yellowish brown (10YR A3 6967

5/5 moist) iron-manganese concretions; pH is 6.0.

24 to 29 inches. Very dark gray (10YR 3/1 moist) to very dark grayish brown (10YR 3/2 moist) heavy silty clay losm; mottles are many medium distinct dark grayish brown (10YR 4/2 moist) to brown (10YR 5/3 moist); crushed color of dark grayish brown to very dark grayish brown (10YR 3.5/2 moist); moderate 6868 fine to medium subangular blocky to angular blocky structure; firm when moist; clear smooth boundary; common brown to dark brown (7.5YR 4/4 moist) to yellowish brown (10YR 5/5 moist) iron-manganese concretions; very dark gray (10YR 3/1 moist) to very dark grayish brown (10YR 3/2 moist) clay and organic

coatings; pH is 6.3.

P 29 to 38 inches. Gravish brown (2.5% 5/2 moist) to light brownish gray (2.5% 6/2 moist) silty clay

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

SOIL Saybrook silt loam SOIL Nos. S48III-99-4 LOCATION Will County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 481140 - 481143

	I	1B1b							ss and parti			1						
	ŀ		Total					Sand		Si	t				3B2	Coa	rse fragme	ents 3BI
Depth	Horizon	Sand	Sift	Clay	Very	Coarse	Medium	Fine	Very fine	1	int. III	Int. 🎞				2A2	, ,-	1,,,
(in.)	l	(2-0.05)	(0.05= 0.002)	( < 0.002)	coarse (2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1	(0.1–0.05)	0.05-0.02	(0.02-	(0.2-0.02)	(2-0.1)		Cm	> 2	1	19-76
	!		0.002)	1	1 (2-1)	١ .	 1. of << 2	i	I.	l	0.002)	ľ ĵ			1	D-4	P	ct. of 76mm
0-14		-1-	59.9	30.6	0,1	1,2	2.3		2 5	<del></del>	20 17	OF F		+	-	Pet.		76mm T
14-19 <del>}</del>			55.6	35.4	0.4	1.3	2.0	3.4	2.5		38.7 38.4	25.5			Ì	tr.	ļ	1
94-30		1	48.7	36.9	1.9	2.7	2.7	4.3	2.8		39.8	14.0		1		1 4	1	
30+		1	62.9	14.5	1,6	2.0	2.4	7.6	9.0		51.8	24.9				3	İ	T -
-								-	<u> </u>					-				
	6Ala			6A3a				Bulk densit	y	4D1	W	rater conte	nt		4C1		рН	_
Depth	Organic	Nitrogen	C/N	I	Carbonate	Ext. iron		4A1e	4A1h	401		4B1c	482		461		8Clc	8C1a
(in.)	carbon			Matter		as Fe		≯s bar	Oven dry	COLE		+s ber	15 bar		WRĐ		(1:1)	(1:1)
		1		H <sub>2</sub> O <sub>2</sub>				İ	]								l ` ´	' '
	Pct.	Pct.		Pet.	Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct.	Pct.		ln/in		KCI	H <sub>2</sub> O
0-14 14-19 <del>3</del>		1 '		1.8			1		<b>\</b>					}		1		7.6
93-30				1.0				ĺ							1	ļ	ł	7.1 6.9
30+		1		1.0			-	_	<b>-</b>					_	<del></del>	╂──		8.1
<b>~</b>																		0,1
-																		
		Extractab	ie bases i	581a		6H2a	CE	EC	6G1d			R	atios to cla	y	8D3		Başə sət	uration
Depth	6N2d	602b	6P2a	6Q2a		Ext.	<u> </u>		_			<u></u>					5C3	5C1
(Ju·)	Ca	Mg	Na	ĸ	Sum	acidity	5A3a Sum cations		Ext. Al			CEC Sum	Ext. Iron	15-bar water	Ca/Mg		Sum cations	NH <sub>4</sub> QAd
	_			<u> </u>	തമാ/100 മ												Det	Pet

Soil Type: Saybrook silt loam

Soil Type: Saybrook Silt Roam
Soil No.: S48III-99-4
Location: Will County, Illinois. NW160 SE40 SE10, Sec. 18 T.37N R.9E.
Slope and land form: 4 percent
Sampled by and date: Paul T. Veale, 1948.

Horizon and Beltsville Lab. No.

O to 14 inches. Very dark gray (10YR 3/1) moist, friable granular silt loam. Al 481140

B1 481141 14 to 19-1/2 inches. Blends into variegated brown and very dark gray (10YR 4/3 and 3/1) moist, light silty clay loam; soft rounded peds about 1/8 inch in diameter.

В2 481142 19-1/2 to 30 inches. Blends into very dark grayish brown (10YR 3/2) moist, silty clay loam, which has subangular structure 1/8 to 1/4 inch in diameter. Crushes to yellowish brown (10YR 5/6) moist. Dark organic matter on cleavage faces is common.

c 481143 30 inches plus. Blends into yellowish brown (10TR 5/4 - 5/6) moist, structureless calcareous silt losm till,

SOIL Seaton silt loam	SOIL Nos. 13th LOCATION Carroll County, Illinois	1
SOIL SURVEY LABORATORY Beltsville, Maryland	LAB. Nos D3533 - D3551	
*		
1816	Size class and particle diameter (mm) 3A1	

Ī		1816	Total					Size clas	s and parti	cle diamete Si	er (mm) 3A	1			6A1a 1	_	4	
		-	Total	1	-		Π	Зало		31	1				Organic	2A2	rse fragme	nts 3E
Depth (In )	Horizon	Sand (2-0.05)	Silt (0.05 0.002)	Clay ( < 0.002)	Very coarse (2-1)	Coarse (1–0,5)	Medium (0.5–0.25)	Fine (0.25–0 1)	Very fine (0 1–0 05)	0 05-0 02	int, III (0 02- 0 002)	Int, II (0.2–0.02)	(2-0 1)		matter H2O2	> 2	2 - 19	19- :t. of _
		-4		-			t. of -< 2			r				<u> </u>	Pct.	Pct.	-	76mm
0-6 6-9			76.6 73.5	10.4 14.4	_	0.1	0.1	0.7	12.1 11.4		25.7 24.6	63.5 60.7			1.6	tr. tr.		
9-12			69.9	19.1	_	0.1	ŏ.ī	ŏ.4	10.4		22.9	57.8			0.6	tr.	l	
12-15		<del> </del>	69.0	20.3	-	0.1	0.1	0.5	10.0		22.2	57.3			9.6	tr.		
15-18			66.3	22.5	-	0,1	0.1	0.5	10.5		20.6	56.5			0.5	tr.		
18-21			65.3	22.6	-	0.1	0.1	0.4	11.5		19.7	57.4			0.3	tr.		
21-24+			65.8	22.7	-	0.1	0.1	0.4	10.9		19.6	57.4			0.1	tr.		Γ.
24출-27출			65.9	22.0	-	-	0.1	0.5	11.5		19.4	58.3			0.1	tr.		
7-30			66.9	20.3	-	-	0.1	0.4	12.3		18.6	60.9			0,1	tr.	<b>.</b>	Η.
30출-33출 33출 <b>-</b> 37			67.9 66.7	18.2 17.8	_	0.1	0.1	0.4	13.4 14.8		17.8 18.2	63.7 63.6			-	tr. tr.		
37-40 <del>}</del>			66.8	17.0		0,1	0.1	0.6	15.4		18.7	63.9			:	or.		
01-402			66.1	16.0	_	0,1	0.1	0.5	17.2		19.0	64.7			-	_		
103-45 45-483			63.9	14.0	ļ <b>-</b>	0.1	0.1	0.5	17.2 21.4	ļ.,	19.0 18.0	67.7			<u>-</u> -	=_		
(8}-52⅓			63.4	15.0	-	-	0.1	0.6	20.9		17.8	67.0			-	-		
52 <del>1</del> -60			65.0	16.2	-	7.	0.1	0.6	18,1		21.4	62.2			-	-		
60-66		<del>  -</del> -	65.5	14.6	-	0.1	0.1	1.3	18.9 27.4		23.4 17.4	61.7 70.6			-	-		+
66-70 75-90			59.6 45.5	9.3	-	0,2		10.6	34.2		13.4	75.5			-	-		
		Extrectat	ble bases 5	81a		6HL	С	EC	6G1d		Ì	_	pH		803 1		Base sat	uration
Depth	6N2d	602b	6P2a	6Q2a		Ext			_				8Clc	BC1s			503	5¢1
(in.)	Ca	Mg	Na	K	Sum	acidity	5A3a Şum		Ext Al				(1:1)	(1 1)	Ca/Mg		Sum	NH <sub>4</sub> C
	_	""•			meg/100 s		cations		" <u>-</u>				KÇI	H <sub>2</sub> 0			cations Pct	Pct
0-6	4.8	1.0			may, 100 I	3.8	1							5.6	1		60	1
6-9	5.8	1.3				3.2	1							5.5			69	
9-12	7.7	2.0				3.6								5.6			73	
12-15	8.2	2.4				3.9								5.6			73 74	
15-18	9.0	2.8	1			4.2								5.6 5.6			76	
18-21	9.2	3-3		ļ	<u> </u>	3.9								5.6			77	+
21-24 <u>\$</u> 4 <u>\$</u> -27 <del>\$</del>	9.4 8.8	3.5 3.4				3.9								5.6			76	
75-305	8.3	3.5				4.6								5.6			75	
02-332	7.6	3.2		-		3.5								5.7			76	
32-37	7.6	3.3				3.3								5.8			77	
37-40+	7.7	3.5 3.5				3.2		Ì						5.8			78	
40 <del>5</del> -45	7.7	3.5				3.0								5.9 6.0			79 79	
45-484	7.1	3-3		<u> </u>		2.8	-				-			6.0			80	<del> </del>
+8 <del>1</del> -521	7.6	3.7				3.0								6.0			80	
52 <u>1</u> -60 60-66	8.2 8.2	4.1 3.5				2.3								6.1			84	
66-70	6.9	3.0				1.9	1	1			1			7.1			84	Ī
75-90	b	ļ				*					_			8.1				_
				<u> </u>		<u> </u>				-				_				<u> </u>
Depth	44.	Сы	Vm	Clay Fract	ion Analys Int	Otz.	] <sub>KI.</sub>	Grbbsite		1		9. P	ert of	Proj	ect Z-1	-2-8		
(in.)	Mt.	Cm	VIII	ial.	""	Arc.	"	- C. D. D. C. C.				b N	ot det	ermin	ed, sam	ple is	calc	reo
			7A: 		l	 	<b></b> 7	 'A3 <del> ≠-</del> -							= chlorite, Vi			= mic
			1							1					tz = quartz,			d
Ī		1	1									Reletive tr. = tr	e amounts: IÇD, X = SI	Dlank — n nali, xx — i	ot detarmine moderate, xx	u, dasn == ( = abunda	not detect ent, xxxx =	ou, domin
		+	+		1		1											
		<del>                                     </del>																
	-						_											
	-																	

Soil Type: Seaton silt loam

Soil No.: 138

Location: Carroll County, Illinois. NW 1/4 of SW 1/4 of Sec. 27, T 25 N, R 3 E.

Slope and land form: 5 percent Sampled by and date: H. Wascher, E. P. Whiteside, and R. J. Muckenhirn. September 27, 1944.

Horizon and Beltsville Lab. No.

O to 6 inches. Brown silt loam; dry to pale brown silt loam; fine granular structure; friable; fine D3533 roots; worm casts; organic residues present.

6 to 9 inches. Brown to yellowish brown silt loam; medium granular structure; moderately vesicular; lightly sprinkled with silica; friable; worm casts, fine roots common.

D3534

9 to 12 inches. Brown silt loam; medium blocky structure; moderately vesicular; slightly firm; roots, wormholes, casts present.

D3535

12 to 15 inches. Brown silt loam; medium blocky structure; moderately vesicular; slightly firm;

irregularly costs of silica flour; fine roots, wormholes common. D3536

15 to 18 inches. Yellowish brown silt loam; medium to coarse blocky structure; lightly sprinkled with

D3537 silica; moderately vesicular; slightly firm; fine roots common, wormholes, casts present.

18 to 21 inches. Brown silty clay loam; medium blocky structure; slightly vesicular; very lightly D3538 sprinkled with silics flour; sharply angular and slightly firm; wormholes few, roots fairly common.

21 to 24 1/2 inches. Brown silt loam; medium blocky structure; slightly vesicular; subangular; slight-

ly firm; silica flour present; wormholes few; roots common. D3539

24 1/2 to 27 1/2 inches. Brown silt loam; medium blocky structure; slightly vesicular; subangular; slightly firm; fine and fibrous roots, wormholes, and casts common. D35140

27 1/2 to 30 1/2 inches. Similar to layer above.

D3541

30 1/2 to 33 1/2 inches. Yellowish brown to moderate brown silt loam; medium blocky structure; slightly vesicular; subangular; slightly firm; occasionally specked with dark brown; roots few. D3542

33 1/2 to 37 inches. Yellowish brown silt loam; weakly developed; slightly vesicular; friable; roots D3543

very few; worm activity slight.

37 to 40 1/2 inches. Yellowish brown silt loam; coarse blocky structure; slightly vesicular; friable;

D3544 worm casts and roots very few.

40 1/2 to 45 inches. Yellowish brown silt loam or very fine sandy loam coarse blocky structure; P3545

friable; splotched with brown; roots and worm casts few.

45 to 48 1/2 inches. Yellowish brown very fine sandy loam; weakly developed coarse blocky structure;

D3546 slightly vesicular; friable; slight silica flour coatings; roots and worm casts few.

48 1/2 to 52 1/2 inches. Same as above.

P3547

52 1/2 to 60 inches. Yellowish brown; very fine sandy loam; weakly developed coarse blocky structure;

slightly vesicular; little or no silica flour; friable; roots few,

60 to 66 inches. Yellowish brown silt loam to very fine sandy loam.

D3549

D3548

66 to 70 inches. Similar to above.

D3550

75 to 90 inches. Light yellowish brown very fine sandy loam; calcareous.

D3551.

Notes: a Part of Project Z-1-2-8.

Soit Sciotoville silt losm

SOIL Nos S53I11-44-6 LOCATION Johnson County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland

LAB. Nos. \_\_\_\_531731 -\_\_531739

		1816	Total					Size clas	s and parti	cle diamete Si		] 	I	I	382	Coa	rse fragme	nts 3
Dapth (In )	Horizon	Sand (2-0.05)	Silt (0 05– 0 002)	Cłay ( < 0 002	Very coarse (2-1)	Coarse (1-0 5)	Medium (0.5–0.25)	Fine (0 25–0.1)	Very fine (0 1–0 05)	O 05-0 02	Int. III (0.02- 0 002)	Int <b>[]</b> (0 2 <b>-0</b> .02)	(2-0 I)		Ċm	2A2 >= 2	2 - 19	19-
						Per	. of < 2	mm	· ·				7.5			Pct.	-	6тп
0-5 5-9 <del>2</del> 93-12 12-16	A1 A2 A3 b	13.4a 11.8		19.6 21.6	0.3	0.5	0.8 0.5	5.4 5.2	6.4 5.9	32.5 31.1	34.5 35.5	42.6 40.7	7.0 5.9	J %.		-		
16-23 23-34	B1 b B21 B22	24.9 9.9	40.6 55.3	34.5 34.8	-	0.1 0.1	1.0	16.6	7.2 7.4	16.5 23.2	24.1 32.1	33.8 32.3	17.7 2.5			-		
34-45 45-51	B23 B3 b	21.8		36.3	-	0.1	0.4	11.6	9.7	17.3	24.6	35.7	12,1			-		
51 <i>-7</i> 2	CI	10.8	57.8	31.4	-	0.2	0.3	3.8	6.5	25.2	32.6	34.7	4.3			-		
	6Ala							Bulk densit	y	4D1	W	leter conte	nt		4C1		рН	_
Depth (In )	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>8</sub>	Ext. Iron as Fe		4Ale 3s bar	4Alh Oven dry	COLE		481c ⅓sber	482 15 bar		WRD		8Clc (1 1)	80 (1
	Pct	Pct.			Pct.	Pct,	g/cc	g/cc	g/cc		Pct,	Pct,	Pct.		ln/ın		KCI	н
0-5 5-9 <del>1</del> 9-12	1.63 0.62																	5 5
12-16 16-23 23-34	0.17																	4
34-45 45-51 51-60	0.12																	14
			ole bases :					EC	6G1d				tatios to cia		803	•	Basa sat	
	ENDA	602b	6P2a			6HLa	'	EV	6910				HERIOS TO CIA		003		5C3	5
Depth (In.)	6N2d Ca	Mg	Na Na	6Q2a K	Sum meg/100 g	Ext. acidity	5A3a Sum cations		Ext Al			CEC Sum	Ext iron	15-bar water	Ca/Mg		Sum cations Pot	NH,
0-5 5-9 <del>1</del> 91-12	5.1 3.0	2.5	tr.	0.5	1100/100	9.9	18.2 15.4					_					44 36	
9 <u>3-12</u> 12-16 16-23 23-34	2.6	4.3 5.4	tr. 0.1	0.7		15.8 16.7	23.¥ 26.2										32 37	
34-45 45-51 51-72	3.8 7.7	6.6 9.8	1.0	0.6		16.9 9.8	28.3 28.8										<b>40</b> 66	
B					tion Analysi										organi	e matt	er in	81
Depth (In.)	Mt,	Chi	Vm. 7A	M1 2	int	Qtz.	KI	Gibbsite				ъ.		lyses	on the			
	-4	Ī	x´rs		<u> </u>	_ <del>_</del>	7	A3				int ≠ i	nterstrøtifie	d layer, Qt.	chlorite, Viz., — quartz,	Ki. = Kao	linite	
<u>.</u>	<del> </del>	<del>                                      </del>			<del> </del>										t determine oderate, xxi			
		<u> </u> ,			<del>  -</del>													

Soil Type: Sciotoville silt loam,

Soil No.: S53Ill-44-6

Location: Johnson County, Illinois. T.14 S., R.2 E., Sec. 9, NE 1/4, NE 40, NE 10, on west side of lightly graveled road in edge of open ungrazed woods, about 190 feet south of edge of woods on east side of road (also about NE corner of section 9) 12 feet north of power line pole in bank with 2 foot road cut.

Vegetation and land use: Broomsedge, bluegrass, weeds, and various deciduous hardwood trees. Slope and land form: 2 percent from S., 5 percent to N. Sampled by and date: J. B. Fehrenbacher, R. H. Ruhe, and H. L. Wascher. September 15, 1953.

Horizon and

Beltsville Lab. No.

Al 0 to 5 inches. Dark grayish brown (10TR 4/2), crumb silt loam. 531731

A2 5 to 9-1/2 inches. Brown (7.5YR 5/4), indistinct thin platy to fragmental silt loam.

A3 9 1/2 to 12 inches. Brown (7.5YR 5/5), 1/8 - 1/4 inch irregular fragmental to subangular, 531733 heavy silt loam.

B1 12 to 16 inches. Reddish brown (6YR 5/4), 1/4 inch subangular blocky silty clay loam. 531734

B21 16 to 23 inches. Reddish brown (6YR 4/4), 3/8 - 1/2 inch subangular to nutlike silty clay 531735 loam with fine to very fine sand.

B22 23 to 34 inches. Dark brown to brown (7.5YR 4/4 and 5/4), 1/4 - 3/4 inch subangular to nut-531736 like mod. thick coatings light yellowish brown (10YR 6/4), silty clay loam with some fine to very fine sand.

B23 34 to 45 inches. Dark brown (7.5YR 4/4 spotted 6/2 and splotched iron-manganese 2/2),
531737 3/4 - 3 inches blocky coated gray to pale brown (10YR 6/1 - 6/3), silty clay loam with fine to
very fine sand.

B3 45 to 51 inches. Pale brown (10YR 6/3) mottled dark brown (7.5YR 4/4) with concretions and 531738 splotches of iron-manganese very dark brown (7.5YR 2/2), silty clay loam.

C1 51 to 72 inches. 51 to 72 inches. Light brownish gray (10YR 6/2) mottled strong brown (7.5YR 531739 5/6) and splotched iron-manganese very dark brown (715YR 2/2), light silty clay loam.

C2 72 to 95 inches plus. Stratified clay loam, sandy clay loam and silty clay loam. Not Sampled

Notes: Taken on terrace about 10 feet above adjacent bottom in former Ohio river (now Cache creek) basin.

Material above 16 inches may be loss of Peorian age, that below 16 inches is probably mostly deposited by waters from high floods of Ohio river or possibly backwaters from Mississippi river floods. Elevation between 320 and 340 feet.

SOIL SURVEY LABORATORY Lincoln, Nebraska March 1964

SOIL TYPE Stronghurst LOCATION Le Salle County, Illinois

silt loam

SOIL NOS. S61-I11-50-5 LAB. NOS. 16586-16593

		lBlb		PARTI	CLE SIZ	E DISTRIA	UTION (in	mm.} (pe	r cent)	3A1		
DEPTH INCHES	HORIZON	VERY COARSE SAND	CCARSE SAND	SAND	SAND	VERY FINE SAND	SILT	CLAY			2A2 > 2	
·-++		2-1	1-0,5	0.5-0.25	0. 25-0. 10	0.10-0.05	0.05-0.002	< 0.002	0.2-0.07	Q02 <b>-Q0</b> 02	+	
0-4	Al	0.3a	0.6a	-		2.3	81.0	15.0				ļ
4-9	A2	0.4a		0.4a		1.2b		17.5	38.4	42.4		Ī
9-14	B1	0.3a	0.6a	0.3a		1.8b	68.5	28.1	33.6	36.9	-	İ
14-22	B21	Tr.a	0.2a		0.3a	2.3b	60.1	37.0	30.9		-	Ì
22-29	B22	-	0 <b>.1</b> a	0.2a		2.1b	65.6	31.7	38.9			1
29-40		-	0.la				66.2		39.1		-	•
40-46		-	0.2a			3.9c	70.4	25.0			-	ţ
46-66 <del>1</del>	C2	Tr.a	O.la	0.24	2.30	6.2c	80.3	10.9	59.0	29.3	-	į
												į
9   6 + 1 5 1 + <del>2   6   9   9  </del>	быь	6G1a	OPG	NIC MA		6CIA	***************************************	WATER"	XXYEAR		Me41411144444	
e	CaCO <sub>2</sub>	Ext.		6Bla		Ext.	h	h	i			
Hq	equiv-		ORGANIC	אוידפה		Iron	Bulk	Field	15-			
ħπ	alent	me/	CARBON	GEN	C/N		Density	State	Atm.			
1:1_	16 £	100g	* 5	%		%	g/cc	%	96			
5.4	-	Tr.	2.17	0.206	10	0.6	1.33	17.8	8.5	ļ		
5.2 4.7 4.8 5.4 6.4		0.4		0.063		0.8	1.38	15.6				
4.7		0.4		0.056	8	1.0		- <b>-</b> -	12.6			ļ
4.8		0.6		0.048	8	1.2			17.9	1	! ,	1
5.4		0.1	0.29	0.041	7	1.3	1.51	16.1				
6.4	-		0.22		·	1.1	- '		17.1	<b>!</b>		1
7.4	1		0.18			1.1			14.3	f l	t	}
7.9	24		0.13			1.0	1.50	15.3				Ī
	Ì											
					5 <u>Bl</u> a							

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Soil type: Stronghurst silt loam

Soil type: Stronghurst 8111 108m

Soil Nos.: 85171-50-5

University of Illinois Laboratory Mos.: 18924 through 18931.

Location: Labelle County, Illinois; 568 feet south of gravel road along fence then 290 feet west, NW160, NE40, NE10, SE2 of Section 11, T34W, RLE.

Classification: Gray-Brown Podzolic.

Natural drainage: Imperfect. Native vegetation: Forest. Present vegetation: Bluegrass

Humid temperate. Climate:

Slope: 1/4- to 1/2-percent southeast. Erosion: 7 to 14 inches topsoil remaining.

Elevation: 655 feet.

Parent material: Deep loss over 5 feet thick.
Described by: J. D. Alexander and H. R. Sinclair, October 26, 1961.

Horizon and Lincoln Iab. Number

0 to 4 inches. Very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium crumb structure; A1 16586 friable; abundant roots; few worm channels filled with A2 material in lower Al; pH 6.0; clear smooth boundary.

4 to 9 inches. Brown (10YR 5/3) silt loam; moderate medium platy structure breaking to weak fine subangular blocks; friable; common roots; many worm channels filled with Al material; pH 5.3; clear A2 16587 smooth boundary.

9 to 14 inches. Brown (10YR 5/3) crushing to 10YR 5/3 to 6/3 light silty clay loss with few fine faint yellowish brown (10YR 5/4) mottles; moderate very fine and fine subangular blocky structure; firm; brown (10YR 5/3) very thin continuous clay coatings; light brownish gray (10YR 6/2) thin patchy 16588 silt costings; common roots; occasional black (N 2/) iron-manganese concretions; occasional worm channels filled with Al material; pH 5.5; clear smooth boundary.

14 to 22 inches. From (10YR 5/3) crushing to 10YR 5/4 medium silty clay loam with few fine faint yellowish brown (10YR 5/4 and 5/6) mottles; moderate fine angular and subangular blocky structure; firm; dark grayish brown (10YR  $\frac{1}{4}$ /2) thin shiny continuous clay coatings; occasional roots; occasional B21 16589 iron-manganese concretions; pH 5.5; clear smooth boundary.

22 to 29 inches. Grayish brown  $(2.57\,5/2)$  crushing to 10YR 5/3 medium silty clay loam with many fine distinct yellowish brown (10YR 5/6 and 5/4), light brownish gray  $(2.57\,6/2)$ , and dark grayish brown  $(2.57\,4/2)$  mottles; moderate fine and medium angular blocky structure; firm; dark grayish brown (10YR 4/2) thin shiny continuous clay coatings; common fine black (N 2/2) iron-manganese concretions; **B22** 16590 occasional roots; pH 6.0; diffuse smooth boundary.

29 to 40 inches. Mixed light brownish gray  $(2.5Y\,6/2)$  and grayish brown  $(2.5Y\,5/2)$  medium silty clay loam with many fine distinct yellowish brown  $(10YR\,5/6)$  and (5/8) and dark grayish brown  $(10YR\,4/2)$  mottles; weak medium primmatic structure breaking to moderate medium and coarse angular blocks; firm; grayish brown  $(10YR\,5/2)$  and dark grayish brown  $(10YR\,4/2)$  thin shiny continuous clay coatings, thickest on vertical ped faces; many fine black  $(N\,2/2)$  iron-manganese concretions; occasional roots; pH 7.0; clear smooth boundary. **B**23 16591

ci 16592 40 to 46 inches. Mixed grayish brown (2.5Y 5/2) and yellowish brown (30YR 5/6 and 5/8) heavy silt loam; massive with occasional vertical cleavage planes; friable; grayish brown (2.515/2) thin shiny clay coatings on vertical ped surfaces; many fine black (N 2/) iron-manganese concretions; occasional roots; pH 8.0; diffuse smooth boundary.

46 to 66 inches plus. Mixed yellowish brown (loyR 5/4 and 5/6) and light brownish gray (loyR 6/2) silt loam; massive; friable; common fine black (N 2/) iron-manganese concretions; an occasional C2 16593 calcium concretion: calcareous.

Remarks: Six 3-inch soil cores were taken in each of the following horizons: Al, 1 to 4 inches; A2, 5 to 8 inches; E22, 25 to 28 inches; and C2, 46 to 49 inches. pH determined with Hellige-Truog pH kit in the field. SCS-421 U S DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE 10-64 (Rev. 9-66) SOIL Swygert silt loam SOIL Nos. S48II1-99-3 LOCATION Will County, Illinois SOIL SURVEY LABORATORY Beltsville, Maryland 481131 - 481134 \_\_ LAB. Nos. \_ 1615 Size class and particle diameter (mm) 3A1 Total 3**B**2 Coarse fragments 3BI Very coarse (2-1) Silt Fine Şand Clay Coarse Medium Very fine Int III int. Ti Depth Horizon **>** 2 2 - 19 | 19 - 76 (1-0 5) (0 5-0.25) (0.25-0.1) (0 1-0 05) 0.05-0 02 (0 02-0 002) (0.2-0 02) (In) (2-0 05) (0.05-0.002) ( < 0 002) (2-0.1)Cm Pct. 55.6 51.2 41.5 48.4 40.3 21.3 38.2 19.0 32.7 13.8 38.0 16.7 0-9 9½-12 12-26 3.3 3.5 2.8 3.8 32.1 0.6 1.6 2.0 4.8 1 34.8 48.0 2.1 2.0 2.0 4.4 2 3.6 4.1 1.8 26+ 38.2 1,9 1.8 3 6A3a Bulk density Water content 6Ala 4DI 4C1 Depth Organic Nitrogen C/N Organic Carbonate
Melber as CaCO<sub>3</sub> 4B1c 8Cla (In.) as Fe COLE WRD Oven dry 3≼ har 15 bar (1 1) 36 har (1:1)H<sub>2</sub>O<sub>2</sub> in/in H<sub>2</sub>0 KĊI Pet. Pct Pct Pct. Pct. g/cc ∎/cc Pct Pct. Pot 0-9 9½-12 12-26 6.0 5.0 2.1 5.6 7.5 0.2 26+ 8.1 6H2a 6G1d Ratios to clay 8D3 Basa saturation Extractable bases 581a 6N2d 602b 6P2a 6Q2a Ext. 5C3 5**C**1 Depth 5A3a Ext Al Ext. iron 15-bar water Ĉa/Mg Mg Sum acidity Sum IH<sub>4</sub> OAc cations cations meq/100 g Pct Pct

Soil Type: Swygert silt loam
Soil No.: \$48111-99-3
Location: Will County, Illinois. NE160 SE40 SE10 Sec. 12, T.43N R.12E.
Sampled by and date: Paul T. Veale, 1948.

Horizon and Beltsville Lab. No.

0 to 9-1/2 inches. Very dark gray (10YR 3/1) moist, silt loam; granular friable structure A1 481131

containing numerous roots.

9-1/2 to 12 inches. Blends into dark grayish brown (10YR 4/2) moist, friable silt loam. A3 481132

12 to 26 inches. Breaks into light brownish gray (10YR 6/2) mottled with pale brown (10YR 481133 6/3) moist, heavy silty clay loam; subangular peds 1/4 to 1/2 inch in diameter; roots between

peds.

26 inches plus. Calcareous light brownish gray (10TR 6/2) moist, mottled with yellowish brown (10TR 5/6) moist, silty clay till; massive structure.

481134

SOIL Tame silt loam

SOIL Nos. S48111-65-2 LOCATION Monard County, Illinois

SOIL SURVEY LABORATORY \_\_\_ Beltsville, Maryland

\_\_\_\_ LAB. Nos. 481386 - 481393

		1816						Şıze cla	ss and parti	cle diamete	r (mm) 3A	1						
			Total					Sand		Sil			1		3B2	Çoa	rsa fragme	ents 3
B41	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II	l			2A2		
Depth (In.)	Morizon	(2-0.05)		(= 0 002)	costze					0.05.0.03			(2-0 1)		Cm	>= 2	2 - 19	19-
(111.)		(2-0.03)	(0 05- 0 002)	( = 0 002)	(2-1)	(1-0.3)	(0.5-0 25)	(0.25-0 1	(0 1–0 05)	0.05-0.02	0 002)	(0.2-0 02)	(2-01)		CIII		Po	ct. of _
		-				Pc	t. of << 2 :									Pet	_ <	76mm
0-9			71.9	56.0	0.1	0.2	0.1	0.3	0.4		34.6	38.8				-		1
9-16			68.9	28.8	0.1	0.2	0.1	0.3	1.6		33.2	37.5				-		1
16-21	ļ	ļ <b>.</b> .	67.9	30.1	0.1	0.2	0.1	0.2	1.4		32.9	36.6			ļ	-		┺
21-27			67.0	30.9	0.1	0.1	-	0.1	1.5		32.2	36.6				-		
27-34 34-40			68.7	29.2	-	-	-	0.1	2.0		31.3	39.3 43.6				-		1
40-48			71.1 73.8	25.7	-	-	-	0.2	2.7		30.5	43.6				-		╆
48-53			13.0	23.5	-	-	-	0.3	2.1		29.5	47.1				-		1
53-59			78.7	19.6	l <u>-</u>	_	۱ ـ	0,2	1.9		37.1	49.1				l _		1
/3-//		1	10.7	19.0	-	_	-	0.2	***		21.07	47.1			_	<u> </u>		+
	<u> </u>	<del>                                     </del>	<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>				<u>.                                      </u>	<u> </u>	<u> </u>		<u></u>	<u> </u>
	6A1a	1	1	6АЗа.		1		Bułk densi	i —	4D1	<b>_</b>	Vater conte	1	ŀ	4C1		pH	_
Depth	Organiç	Nitrogen	C/N	Organic	Carbonate			4Ale	4A1h			4Blc	4B2				8CIc	80
(ln.)	Carbon	1	1	Matter	as CaCO <sub>3</sub>	as Fe		⅓ bar	Oven dry	COLE		≯≨ bar	15 bar		WRD		(1 1)	(1
				H202				78 55	"""			"# 54"						1,1
	Pct	Pct	1	Pet.	Pct.	Pct.	g/cc	g/cc	g/cc		Pct.	Pct	Pct		ın/in		KCI	H <sub>2</sub>
0-9	,	+ "		1.9		· •	<del>-</del>		<del>                                     </del>			<del></del>	<u> </u>		<u> </u>		1	-
9-16	1	1	1	1.0		1		1	1				l					5. 5.
16-21	1	1	1	1.4		1		1	1				l					5.
21-27		1		0.9			1		1			Ι ΄	Ī				1	5.
27-34 34-40	1	1	1	0.6		1		1	1				l					5.
				0.4				L										5.
40-48				0.4														6.
48-53				ا				1										
53-59				0.1				<b></b>	<del> </del>								-	7.
		1	]						<u> </u>									
		Extractat	le bases !	581a		6 <b>HLa</b>	C	EC	6G1d			F	Ratios to cir	ay .	8D3		Base sa	turatio
Depth	6N2d	602b	6P2a	6Q2a		Ext	_		_								503	50
(ln.)	Ca	Mg	Ne Ne	K	١		5A3a		Ext,			CEC	Ext.	15-bar	Ça/Mg			
	La Ca	""#	""	"	Sum	acidity	Sum cations		Al			Sum	iron	water			Sum	NH <sub>4</sub>
			'	<u>'</u>	meq/100 g	i	Lationa	!	<u>'</u>								Pct	Pc
0-9	7.5	3.1	0.3	0.6		11.0											51	
9-16	7.5 9.4	3.7	0.4	0.4		8.3							l				74	
16-21	9.6	4.5	.0.3	0.3		7.9											76	
21-27	9.9	5.9	0.1	0.5		6.9											79	
27-34	9.3	5.8	0.2	0.5		6.1							l				72	
34-40 40-48	9.3 8.8 8.3	5.7	0.2	0.4		4.9									-			₩
	8.3	5-3	0.2	0.4		3.9							l				76	
48-53	30.1					26							l					
53-59	10.4	7.3	0.2	0.3	<del> </del>	0,6		<del> </del>	<del>                                     </del>		<b></b>	<del> </del>					97	1
													1					
		1					<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>	١,	
				Clay Fract	ion Analysi	s 7Alb-d												
Depth	Mt	Chi	Vm	Mı	Int,	Qtz.	KI.	Gibbsite										
(in )	]	1		"		l												
			7A	2														
	-		x n			-	7.	A3	-						chionte, V			- 1810
	-	1										int. == 1	nterstratifie	d layer, Qt	z. == quartz,	KI - Kao	unite	
	1	1					1		1	1					t determine			
	ļ	+		<del>-</del>	<b>⊢</b> −	1	-	├─	1	-					oderate, xx			
	1	1					1		1	1								
		+	-	_		-	-			4								

Soil Type: Tama silt loam

Soil No.: 548Ill-65-2

Location: Menard County, Illinois. NE 1/4 NE 40 NW10 Sec. 33 T.18N R.7W 165 feet east of NW corner of

NW 10.

Vegetation and land use: Sod Slope and land form: 5 percent Erosion: None

Parent Material: Deep loess

Sampled by and date: Dr. Whiteside and R. H. Rust. August 10, 1948.

Horizon and Beltsville Lab. No.

Al 0 to 9 inches. Broken color (10YR 3/1), crushed color (10YR 3/2) silt loam, fine granular 481386 1/32 to 1/8 inch in diameter, gray specking on dry aggregates, physical condition friable.

A3 9 to 16 inches. Broken color (10TR 3/1), crushed color (10TR 3.5/2) heavy silt loam, medium 481387 granular 1/16 - 1/4 inch more angular than A1, physical condition friable.

B1 16 to 21 inches. Broken color (10YR 3/2) to (10YR 4/3) on interior, crushed color (10YR 4/3), 481388 11ght silty clay loam, coarse granular to fine subangular blocky 1/8 to 1/2 inches in diameter. (10YR 4/3) coatings on ped interior, friable.

B12 21 to 27 inches. Broken color (10YR 4/3), crushed color (10YR 5/4), silty clay loam, medium 481389 subangular blocky 1/4 to 5/8 inch in diameter, coatings (10YR 4/2), friable.

B22 27 to 34 inches. Broken color (10YR 4/3) mottled with (10YR 6/4 - 6/6) crushed color (10YR 481390 5/6), silty clay loam, coarse subangular blocky 1/4 to 1 inch, coatings (10YR 4/2), firm but friable.

B3 34 to 40 inches. Broken color (10YR 5/4) with some (10YR 6/4 - 6/6) crushed color (10YR 5/6), 481391 light silty clay loam, very coarse subangular blocky 1/2 to 1-1/2 inches some (10YR 4/3) coatings, firm but friable.

Cl 40 to 48 inches. Broken color (10YR 5/6), crushed color (10YR 5/6) silt loam, massive, few 481392 (10YR 4/3) coatings, friable.

C2 48 to 53 inches. Broken color (10YR 6/4), crushed color (10YR 6/4), calcareous silt, massive, Not Sampled very friable.

C2 53 to 59 inches. Broken color (10YR 8/1) (80 percent), (10YR 7/5) (16 percent), (5YR 4/6) (4 481393

Notes: Profile description-moist condition except Al, which was slightly moist. Roots abundant throughout eight horizons. Calcareous losss began at 48 inches.

SOII	L SURVEY	LABORATO	RY Lincoln, Ne	br	March 1964	
SOII	L TYPE Tre	mer Lt loam	LOCATION	LaSalle County	, Illinois	-44
		S61-I11-50-3	LAB.	NOS. 16568	-16576	
÷10000-1111000000		PARTICLE				······································
	Asua Train	PARTICLE	Man Man	in mm.) (par cont)	2A2	
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Soil type: Tracr silt loam

Soil Nos.: S51111-50-3 University of Illinois Laboratory Nos.: 18906 through 18914.

Iocation: IaSalle County, Illinois; 223 feet south of gravel road along fence, then 71 feet due west, and then 16 feet north-northeast to sampling site. NW160. NE40. NE40. NE27 of Section 11. T34N. RIE.

Classification: Gray-Brown Podzolic intergrading to Planosol.

Natural drainage: Poor. Native vegetation: Forest. Present vegetation: Bluegrass. Climate: Humid temperate.

Slope: 1-1/2 percent down drainage way. Erosion: 7 to 14 inches topsoil remaining.

Elevation: 650 feet.

Parent material: Deep loss over 5 feet thick.
Described by: L. E. Tyler and J. D. Alexander, October 25, 1961.

Horizon and Lincoln Lab. Number

O to 5 inches. Very dark gray (10YR 3/1) crushing to 10YR 3/2 silt loam; weak thin platy and moderate

6.0; abrupt smooth boundary.

5 to 14 inches. Grayish brown (2.5Y 5/2) crushing to 10YR 6/2 silt loam; moderate thin platy structure; 16569 friable; considerable dark brown color around root channels; abundant roots; common fine iron-manganese concretions; worm channels filled with Al material; pH 5.5; clear smooth boundary.

14 to 18 inches. Grayish brown (2.5Y 5/2) light silty clay loam; moderate fine subangular blocky 16570 structure; friable; discontinuous silt coatings on all surfaces; dark gray (10YR 4/1) discontinuous clay coatings on all surfaces in lower part of horizon; abundant roots; occasional worm channels filled with Al material; pH 5.3; abrupt smooth boundary.

B21 18 to 23 inches. Bark gray (2.5Y 4/1) heavy silty clay loam; moderate fine and very fine angular blocky structure; firm; very dark gray (10YR 3/1) to dark gray (10YR 4/1) continuous clay coatings; common 16571 roots; pH 5.3; gradual smooth boundary.

23 to 28 inches. Olive gray (5Y 5/2) heavy silty clay loam with few fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; moderate fine and very fine angular blocky structure; firm; dark gray 16572 (2.5Y 4/1) continuous clay coatings; common roots; pH 5.5; gradual smooth boundary.

28 to 36 inches. Olive gray (5Y 5/2) medium to heavy silty clay loam with few fine distinct yellowish brown (10YR 5/6 and 5/8) mottles; mottled slightly more than above horizon; moderate medium angular 16573 blocky structure; firm; dark gray (10YR 4/1) continuous clay coatings; occasional roots; a krotovina starts in this horizon and continues down below a depth of 62 inches; it has fine brown mottles and structure of the surrounding horizon; pH 6.0; gradual smooth boundary.

36 to 46 inches. Olive gray (5Y 5/2) medium silty clay loam with common fine distinct yellowish brown (10YR 5/8) to dark yellowish brown (10YR 4/4) mottles; weak medium prismatic structure breaking to weak coarse angular blocks; firm; dark gray (2.5Y 4/1) discontinuous clay coatings; occasional roots; 16574 pH 7.0; gradual wavy boundary.

46 to 53 inches. Olive gray (5Y 5/2) heavy silt loam with common fine distinct strong brown (7.5YR 5/6 and 5/8) mottles; massive with vertical cleavage planes 3 to 6 inches apart; friable; dark gray (2.5Y 4/1) to very dark gray (2.5Y 3/1) discontinuous clay coatings on vertical surfaces; matrix con-16575 tains many fine hair- to string-sized channels filled with dark material; pH 7.2; gradual amouth

53 to 62 inches plus. Same as Cl except slightly more mottled; coatings are fewer and thinner and 16576 fewer hair- to string-sized channels filled with dark material.

Six 3-inch soil cores were taken in each of the following horizons: Al, 1 to 4 inches; A2, 8 to 11

SOIL TYPE Trace LOCATION LeSalle County, Illinois silt loam

SOIL NOS. 861-111-50-4 LAB. NOS. 16577-16585

],		1B16	***************	PARTI	CLE SIZ	E DISTRIB	UTION (in	mm.) (pe	rummuu. F COM)	3A1	**************************************	***************************************
0.000		VERY				VEOV			i		2A2	
DEPTH	HORIZON	COARSE SAND	COARSE SAND	MEDIUM SAND	FINE SAND	VERY FINE SAND	SILT	CLAY			> 2	
		2.1	1-0.5		0, 25-0, 10		0.05-0.002	< 0.002	0 20 02	0.02-0.002	7.	
0-4	Al	0.la	0.5a	0.6a	1.2b	2.7	78.0	16.9		42.2		
4-11	A2	0.5a	0.8a	0.6a	1.2b	1.3	75.6	20.0	37.0	40.6	_	
11-15	B1	0.5a	0.6e	0.6a	0.96	1.9	68.6	26.9	33.8	37.2	_	
15-24	B21	O.la	0.3a	0.4a	0.76	1.2	59.5	37.8		31.7	-	
24-33	B22	0.la	0.4a	0.3a	0.50	2.6	62.0	34.1	34.7	30.2	-	
33-42	<b>B</b> 3	0.2a	0.4a	O.la	0.36	3.1	66.7	29.2	39.4	30.6	-	
42-51	CI	0.2a	0.4e	0.2a	0.95	2.8	70.6	24.9	42.8	31.3	-	
51-58	Ç2	0.2a	0.4a	0.2c		4.2d	74.3	19.9		31.8	-	
58-66	C3	0.1a	0.4c	0.3c	0.8c	3.7d	78.2	16.5	48.3	34.1	-	]
Server . seedfrestderffi.	6кть	6Gla	CRGA	NIC MA	TTER	6Cla	DOELADEL-111079-171083-0	WALER C	ONTENT		9694444664444444666 ·	) 1 2447 ( 4474 ) 2144 ( 14 244 )
e	Caco	Ext.	6Ala	6Bla		Ext.	<u> </u>	<u>h</u>	1 1			
pН	equi.v=		ORGANIC	NITRO-		Iron		Field-	15-			
	alent	шеу	CARBON		C/N	as Fe	Density		Atm.			
1:1	% f	100g		0.177		<i>\$</i>	g/cc	%	% 8.7	-		
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5.1	)	0.4		0.048	6		٠.٠٠	10.1	11.0			ł
5.2		0.3		0.048	6	1	1.41	17.6	17.5	ĺ		
5.5		0.3	0.29						18.7			
6.1		_	0.18					_	15.8			
6.7	<u>-</u>	i	0.14				1.50	16.2				
7.5	1 15		0.18						10.4			
7.9	, 15 I						l			•		
1			0.18						7.9			
311 between the contract of	***************************************	EXTRAC	1442129411494444	CATIONS	5Bla	<b>3642243245445</b> 44444	503	5C1	<u></u>	to Cl	ay8m	8 <b>D</b> 3
5Ala	***************************************	EXTRAC 602b	1442129411494444	CATIONS 6P2a	5Bla 602a	5Bla	503 Base	5C1 Base	<u></u>	to C1	ay8 <u>m</u> Water	8 <b>1</b> 3
5Ala CATION	6 <b>N</b> 2b	602 <b>b</b>	TABLE 6Hla	6P2a	602a	•	503 Base Sat.%	Base Set.%	Retios		Water at	
5Ala	c.	602b Mg	TABLE GELA H	6P2a.		Sum	503 Bese Set.% on Sum	Base Set.%	Ratios NH <sub>4</sub> OAc	Ext.	Water at 15-	813 Ca/Mg
5Ala CATION EXCHANGE CAPACITY MILLOAC	6N2b c.	602b Ma milliaguiv	TABLE 6HLA H	6P2a No 100g. sel	602a K	Sum	503 Base Sat.% on Sum Dations	Base Set.% NHQOAC	Ratios NH <sub>4</sub> OAc CEC		Water at 15- Atm.	Ca/Mg
5Ala CATION EXCHANGE CAPACITY NELLOAC	6N2b c.	602b Mg milliagoly 1.8	TABLE 6HLB H	6P2a No 100g. sell Tr.	602a K 0.8	Sum >	503 Base Sat.% on Sum Oations 57	Base Sat.% NH <sub>11</sub> OAc	Ratios NH <sub>1</sub> OAc CEC .72	Ext.	Water at 15- Atm.	Ca/Mg 3.4
5Ala CATION EXCHANGE CAPACITY MHLOAC <12.1 11.5	6.2 6.0	602b Mg milliequiv 1.8 1.9	TABLE 6HLA H	6P2a No 100g. sell Tr. Tr.	602a K 0.8 0.6	Sum > 15.5 14.1	503 Base Sat.% on Sum Dations 57 60	Base Sat.% NH <sub>1</sub> OAc 73 74	Ration NHi <sub>L</sub> OAc CEC •72 •58	Ext.	Water at 15- Atm. .51	Ca/Mg 3.4 3.2
5Ala CATION EXCHANGE FAPACITY NHLOAC  12.1 11.5 16.4	6.2 6.2 6.0 9.4	602b Mg milliaquiv 1.8 1.9 3.6	TABLE 6 6Hia H olents per 6.7 5.6 6.2	6P2a No 100g. sell Tr.	602a K 0.8	Sum ——> 15.5 14.1 19.9	503 Base Sat.% on Sum Dations 57 60 69	Base Set.% NH <sub>1</sub> OAc 73 74 84	Ratios NELOAC CEC .72 .58 .61	Ext.	Water at 15- Atm.	Ca/Mg 3.4
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5Ala CATION EXCHANGE VAHAGAC VIII.5 16.4 26.0 26.4 23.3 19.6 14.8 12.1 a. > 5 b. 5-2	6.2 6.0 9.4 16.3 16.3 12.2 12.8	602b Mg milliagolv 1.8 1.9 3.6 7.8 8.1 7.2 Mn nod	TABLE 6H1a  H 6.7  5.6  6.2  7.4  6.8  3.6  2.2  ules.	6P2a No 100g. sell Tr. Tr. O.1 O.1 O.1 O.1 O.1	0.8 0.6 0.7 1.0 0.8 0.7 0.6 0.5	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0	503 Base Sat.% on Sum Etions 57 60 69 77 79 85 90	Pase Sat. % NHL, OAc 73 74 84 97 97 91 106	Ratios Ratios .72 .58 .61 .69 .77 .80 .79 .74 .73 rbonat ed by	Ext. Iron e nodu Univ.	Water at 15- Atm. .40 .41 .55 .54 .50 .52 .48 les. of III	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8
5Ala CATION EXCHANGE VIELL 11.5 16.4 26.0 26.4 23.3 19.6 14.8 12.1 a. > 5-2 c. > 5	6N2b c. 6.0 9.4 16.3 16.0 12.8 0% Fe-	602b Mg milliagolv 1.8 1.9 3.6 7.8 8.1 7.2 Mn nod Mn nod Mn nod	TABLE 6H1a  H  Series per  5.6  6.2  7.4  6.8  3.6  2.2  ules. ules.	6P2a No 100g. sell Tr. Tr. O.1 O.1 O.1 O.1 O.1	0.8 0.6 0.7 1.0 0.9 0.8 0.7 0.6	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0	503 Base Sat.% on Sum Etions 57 60 69 77 79 85 90	Pase Sat. % NHL, OAc 73 74 84 97 97 91 106	Ratios Ratios .72 .58 .61 .69 .77 .80 .79 .74 .73 rbonat ed by	Ext. Iron	Water at 15- Atm. .40 .41 .55 .54 .50 .52 .48 les. of III	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8
5Ala CATION EXCHANGE VIII.5 16.4 26.0 26.4 23.3 19.6 14.8 12.1 a. 5-2 c. 7-8 g. 7-8	6.2 6.0 9.4 16.3 16.0 12.8 0% Fe- 0% Fe- Kg/M	602b Mg milliagolv 1.8 1.9 3.6 7.8 8.6 8.1 7.2 Mn nod Mn nod Mn nod to 60	TABLE 6H1a  H 5.6.7 5.6 6.2 7.4 6.8 3.6 2.2 tles. ules. inche	6P2a No 100g. sell Tr. Tr. O.1 O.1 O.1 O.1 O.1 C.1 O.1	0.8 0.6 0.7 1.0 0.9 0.8 0.7 0.6 0.5	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0  te nodu	503 Base Sat.% on Sum 2ations 57 60 69 77 79 85 90 d. 5- e. De	Pase Sat. % NHL, OAc 73 74 84 97 97 91 106	Ratios Ratios .72 .58 .61 .69 .77 .80 .79 .74 .73 rbonat ed by	Ext. Iron e nodu Univ. bonate	Water at 15- Atm	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8
5Ala CATION EXCHANGE VAHACAC 12.1 11.5 16.4 26.0 26.4 23.3 19.6 14.8 12.1 a. > 5-2 c. > 7.8 h. Det	6.2 6.0 9.4 16.3 16.3 12.2 12.8	602b Mg milliagolv 1.8 1.9 3.6 7.8 8.6 8.1 7.2 Mn nod Mn nod to 60 d by U	TABLE 6H1a  H 6.7  5.6  6.2  7.4  6.8  3.6  2.2  ules. ules. inche	6P2a No 100g. coll Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1	0.8 0.6 0.7 1.0 0.9 0.8 0.7 0.6 0.5	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0  te nodu 6A) ois. C	503 Base Sat.% on Sum 2ations 57 60 69 77 79 85 90 d. 5- e. De	Pase Sat. % NHL, OAc 73 74 84 97 97 91 106	Ratios Ratios .72 .58 .61 .69 .77 .80 .79 .74 .73 rbonat ed by	Ext. Iron e nodu Univ. bonate	Water at 15- Atm	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8
5Ala CATION EXPLANCE VIII.15 16.4 26.0 26.4 23.3 19.6 14.8 12.1 a. 5-2 c. 7-8 h. Det	6.2 6.0 9.4 16.3 16.0 12.2 12.8 0% Fe- % Fe- Kg/Me ermine oil Sc	602b  Mg milliagolv  1.8  1.9  3.6  7.8  8.1  7.2  Mn nod Mn nod to 60 d by U 1. Soc	TABLE 6H1a  H 61.7  5.6  6.2  7.4  6.8  3.6  2.2  ules. ules. inche nivers Am.	6P2a No 100g. sell Tr. Tr. 0.1 0.1 0.1 0.1 0.1 0.1 0.1 Froc.	0.8 0.6 0.7 1.0 0.9 0.8 0.7 0.6 0.5	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0  te nodu 6A) ois. C -366 19	503 Base Sat. % on Sum Pations 57 60 69 77 79 85 90 d. 5- e. De	Pase Sat. % NH4 OAc 73 74 84 97 97 91 106	Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ra	Ext. Iron Univ. bonate R. E.	Water at 15- Atm	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8
5Ala CATION EXCHANGE VIII.5 16.4 26.0 26.4 23.3 19.6 14.8 12.1 2.1 2.1 2.1 2.1 2.1 2.1 2.	6N2b c. 6.0 9.4 16.3 16.0 12.2 12.8 0% Fe- Kg/M- ermine oil Sc srmin	602b Mg milliagolv 1.8 1.9 3.6 7.8 8.1 7.2 Mn nod Mn nod to 60 d by U 1. Soc d by U	TABLE 6H1a  H 6-16.7  5.6  6.2  7.4  6.8  3.6  2.2  ules. ules. inche nivers nivers	6P2a No 100g. sell Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 ty of Proc. ity of	0.8 0.6 0.7 1.0 0.9 0.8 0.7 0.6 0.5	Sum  15.5 14.1 19.9 32.6 32.4 24.8 23.0  te nodu 6A) ois. C -366 19 ois. R	503 Base Sat.% on Sum 2ations 57 60 69 77 79 85 90 d. 5- e. De	Pase Sat. % NH4 OAc 73 74 84 97 97 91 106	Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ratios Ra	Ext. Iron Univ. bonate R. E.	Water at 15- Atm	Ca/Mg 3.4 3.2 2.6 2.1 1.9 1.5 1.8

Soil type: Tracr silt loam Soil Nos. : 861111-50-4

University of Illinois laboratory Nos.: 18915 through 18923.

Location: LaSalle County, Illinois; 606 feet south of gravel road along fence, then 421 feet west and then 23 feet west-southwest to sampling site. NW160. NW10. NW10. SW2 of Section 11. TQ1N. RIF.

Classification: Gray Brown Podzolic intergrading to Planosol.

Natural drainage: Poor. Native vegetation: Forest. Present vegetation: Bluegrass.

Climate: Ramid temperate.

Slope: O percent, slight depression. Erosion: 7 to 14 inches topsoil remaining.

Elevation: 655 feet.

Parent material: Deep losss over 5 feet thick.

Described by: L. E. Tyler and J. E. Paschke, October 26, 1961.

Horizon and Lincoln Teb. Number

O to 4 inches. Very dark gray (10YR 3/1) crushing to 10YR 3/1 to 3/2 silt losm; moderate medium and A1 16577 fine crumb structure; friable; abundant roots; pH 5.5; clear smooth boundary.

4 to 11 inches. Grayish brown (10YR 5/2) to light brownish gray (10YR 6/2) silt loam with common fine faint yellowish brown (10YR 5/4) mottles mainly in root channels; moderate medium platy and moderate fine and very fine subangular blocky structure; friable; common roots; worm channels filled with Al 16578 material; few iron-manganese concretions predominate in upper part; common iron-manganese concretions; pH 5.3; clear smooth boundary.

Grayish brown (2.5Y 5/2) light silty clay loam with common fine faint dark yellowish 16579 brown (10YR 4/4) mottles; moderate fine and very fine subangular blocky structure; friable; common roots; common iron-manganese concretions; pH 5.9; clear smooth boundary.

**B**21 15 to 24 inches. Dark gray (10YR 4/1) crushing to 10YR 4/2 heavy silty clay loam with common medium 16580 distinct yellowish brown (10YR 5/6) mottles in ped interiors and common medium fine dark yellowish brown (10YR 4/4) mottles on ped exteriors; moderate fine and very fine subangular and angular blocky structure; firm; dark gray (10YR 4/1) thin continuous clay coatings; common roots; common fine iron-manganese concretions; pH 6.0; gradual smooth boundary.

200 24 to 33 inches. Olive gray (5Y 5/2) crushing to 2.5Y 4/2 to 5/2 medium to heavy silty clay loam with 16581 many medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/8) mottles; weak coarse prismatic structure breaking to moderate fine and medium angular blocks; firm; gray (5Y 5/1) to dark gray (5Y 4/1) thin continuous clay coatings; common roots; a krotovina starts at 33 inches and continues to 66 inches; common iron-manganese concretions; pH 6.0; gradual smooth boundary.

33 to 42 inches. Olive gray (5Y 5/2) light to medium silty clay loam with many medium distinct reddish yellow (7.5YR 5/6) to strong brown (7.5YR 5/8) mottles; weak coarse prismatic structure break-B3 16582 ing to moderate coarse and medium angular and subangular blocks; firm; dark gray (5Y 4/1) thin continuous clay coatings mostly on vertical ped surfaces; occasional roots; some old root channels filled with dark gray (5Y 4/1) material; common iron-manganese concretions; pH 6.8; gradual smooth boundary.

42 to 51 inches. Mixed olive gray (5Y 5/2) and strong brown (7.5YR 5/8) silt loam; massive with some large vertical cleavage planes; friable; dark gray (5Y 4/1) thin discontinuous clay coatings mostly 16583 on vertical ped surfaces; occasional roots; many old root channels filled with dark gray (5Y 4/1) material; common iron-manganese concretions; pH 7.5; gradual smooth boundary.

51 to 58 inches. Mixed dark olive gray (5Y 3/2) and strong brown (7.5YR 5/8) silt loam; massive with some large vertical cleavage planes; friable; dark gray (5Y 4/1) thin discontinuous clay coatings mostly on vertical ped surfaces; occasional roots; common iron-manganese concretions; few large root 36584 channels filled with dark silty clay loam material; pH 7.6; gradual smooth boundary.

58 to 66 inches. Mixed gray (5Y 5/1) 30 percent, and strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) 70 percent, silt loam; massive; friable; dark gray (5Y 4/1) thin discontinuous clay coatings mostly on vertical ped surfaces; occasional roots; pH 7.6.

Remarks: Six 3-inch soil cores were taken in each of the following horizons: Al, 1 to 4 inches; A2, 7 to 10 inches; E21, 18 to 21 inches; and C1, 45 to 48 inches. pH determined with Hellige-Truog pH kit in the field. This profile is located in a shallow upland closed depression.

SOIL Wartrace silt loam SOIL Nos. 862 111-44-1 LOCATION Johnson County, Illinois

SOIL SURVEY LABORATORY Lincoln, Nebraska
General Methods: 1A, 1Blb, 2A1, 2B

LAB. Nos. 16953-16962

March 1966

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									and parti	cle diamete	r (mm)	3AL						
			Total					Sånd		Şil	t			4Elc		2A2Coat	rse fragme	nts
		P 4	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II		Moved	l			
Depth	Horizon	Sand			000550							i I		Clay		<b>&gt;&gt;</b> 2	2 ~ 19	19-76
(ln.)		(2-0.05)	(0.05-	( < 0.002)	(2-1)	(1-0.5)	(0.5-0.25)	(0.25-0.1)	(0,1-0,05)	0.05-0.02	(0.02- 0.002)	(0.2-0.02)	(2-0.1)	,			P.	t, of
			0.002)	1	I ' ' I			l i		1	U.UUZ)	'		₽-+		Pct.		76mm
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0-5	Αp	1.5	85.9	12.6	0.2a	0.la	Tr.a	0.2a	1.0b	44.5	41.4	45.6	0.5			-		
5-9	A2	1.3	85.5	13.2	0.la	0.1a	Tr.a	0.la	1.Ob	44.3	41.2	45.4	0.3	Tr.	ľ	-		
9-13	B1	1.0	78.4	20.6	Tr.a	Tr.a_	Tr.a	0.la	0.95	36.4	42.0	37.4	0.1	1.0		-		
13-20	B21	0.9	70.0	29.1	Tr.a	Tr.a	Tr.a	0.la	0.80	31.8	38.2	32.7	0.1	1.6		-		
					O.la			0.1a	0.8	30.5	38.5	31.4	0.2	4.0		_	ł	
20-29	B22	1.0	69.0	30.0		Tr.a	Tr.a					34.1				] -	1	
29-40	B23	1.2	71.4	27.4	0.la	Tr.a	Tr.a	0.2a	0.9a	33.1	38.3		0.3	4.7			1	<del></del> -
40-50	B31	1.2	75.8	23.0	0.la	Tr.a	Tr.a	0.1a	1.0a	35.8	40.0	36.9	0.2	5.5	1	-	i	
50-62	B32	1.0	79.0	20.0	0.la	Tr.a	Tr.a	Tr.a	0.9c	37.7	41.3	38.6	0.1	2.6	1	-	1	
62-74	c	1.0	81.3	17.7	Tr.a	Tra	Tr.a	Q.la	0.9c	38.9	42.4	39.9	0.1	1.8	1	-	l .	Į.
74-82	Ċ	1.0	83.1	15.9	Tr.a	0.1a	Tr.a	Tr.a	0.9c	40.2	42.9	41.1	0.1	1.4		_		
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	6Ala	6Bla				602a		Bulk densit		4001			er Cor		· · · ·		pН	10
Depth	Organic	Nitrogen	C/N	1	Carbonate	Ext.	4Ala	4Alc	4 <b>A1</b> b	COLE	484	4B3	4Blb	4B2	4C1	!		BC1
	carbon	introgen	l ""	ł	as CaCO <sub>2</sub>	Iron	Field-	ł	Air-	i	Field-			ĺ	1/3 <b>-si</b> n	-		۱.,
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	₫.					Fe	F	F		l	"	ļ <sup>~</sup>	· •	`	Bar			ı
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	Pct.	Pct.	<b></b>		Pct.	Pct.	g/cc	g/cc	g/cc	<b></b>	Pct.	Pct.	Pet.			<b></b>	+	+_
0-5	0.96	0.094	[ 10			0.7	1.38	1.32	1.34	0.007	5.8	22,4	20.3	5.1	0.20	1	1	5.
5-9		0.073	9	l	1	0.8	1.43	1.35	1.38	0.007	7.3	23.5	19.4	4.8	0.20	l	1	5. 5.
9-13		0.038	7	l	1	1.2	1.44	1.39	1.44	0.014	11.1	25.3	21.9		0.10	l	1	5.
		0.030		<del> </del>				1.49			19.5	24.9	24.1	11.6	0.19			4.
13-20	0.22			ļ	1	1.7	1.52	1.49		0.020		27.7			0.19	ļ		4.
20-29	0.18			ļ		1.8	1.52	1.48		0.028	24.0	27.8	25.4	12.7	0.19	1		17.
29-40	0.14			1		1.8	1.48	1.42	1.53	0.024	26.5	30.0	26.5	12.2	0,20	<b>—</b>		14.
40-50	0.10				1	1.8	1.44	1.40	1.50	0.024	27.6	30.7	25.2	10.5	0.21	i		4.
50-62	0.09			1	i	1.6	1	1					24.8	9.3	l		1	4.
62-74	0.06		1	ł	l	1.6	1.52	1.48	1.55	0.017	25.4	28.0	24.6	8.1	0.24		1	4.
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74-82	0.05					1.6				Ì			l	7				١,٠
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		Éxtractat	ole bases	5Bla		6 <b>HLa</b>	Cat.	Exch.	6стр					T	8D3		Base sat	_
	6N2a	Extractat	ole bases 6P2a			6HLa		Exch.	601ъ						-		5C3	_
Depth	6N2a					1	Ca	p.	6Glb KCl-						-			_
Depth (in.)	1	602a	6P2a	6 <b>92a</b>	Shum	Ext.	Ca 5A3a		KC1-						8D3 Ca/Mg		5C3 Sum	5C
	6 <b>N2a</b> Ca				Sum	1	Ca 5A3a Sum	р. 5 <b>А1.</b> в	KC1- Ext.						-		5C3	5C
	1	602a	6P2a	6 <b>92a</b>		Ext. Acidity	Ca 5A3a Sum	p.	KC1- Ext.						-		503 Sum Cation	5C
	Ca	602a Mg	6P2a	6 <b>02:a</b> K	meg/100 g	Ext. Acidity	Ca 5A3a Sum Cations	5ALA NH <sub>4</sub> OAc	KC1- Ext.						-		5C3 Sum Cation	50 NH <sub>4</sub> 0 Pet
	1	602a	6P2a	6 <b>92a</b>	meq/100 (	Ext. Acidity	Ca 5A3a. Sum Cationa 9.9	5ALA NELLOAC	KC1- Ext.						-		5C3 Sum Cation Pct. 50	5C NH <sub>4</sub> C Pet
(in.) 0-5	Ca 4.0	602a Mg	6P2a	6 <b>02:a</b> K	meg/100 g	Ext. Acidity	Ca 5A3a Sum Cations	5ALA NH <sub>4</sub> OAc	KC1-Ext.						Ca/Mg		503 Sum Cation Pct. 50 48	71 71
(in.) 0-5 5-9	4.0 3.9	602a Mg 0.6 0.5	6P2a	602a K	meq/100 g 5.0 4.6	Fixt. Acidity	5A3a Sum Centions 9.9 9.5	7.0 6.5	KC1-Ext.						Ca/Mg		5C3 Sum Cation Pct. 50	71 66
0-5 5-9 9-13	4.0 3.9 4.5	602a Mg 0.6 0.5 1.0	6P2a	602a K 0.4 0.2 0.2	meq/100 g 5.0 4.6 5.7	Ext. Acidity 4.9 4.9 6.4	9.9 9.5 12.1	7.0 6.5 8.7	KC1- Ext. Al						Ca/Mg		503 Sum Cation Pct. 50 48 47	71 66
0-5 5-9 9-13 13-20	4.0 3.9 4.5	0.6 0.5 1.0 2.0	Fr. Tr. Tr.	0.4 0.2 0.2 0.3	meq/100 g 5.0 4.6 5.7 8.3	Ext. Acidity 4.9 4.9 6.4 9.8	9.9 9.5 12.1 18.1	7.0 6.5 8.7	KC1- Ext. Al						Ca/Mg		503 Sum Cation Pct. 50 48 47	71 71 66
0-5 5-9 9-13 13-20 20-29	4.0 3.9 4.5 6.0 7.0	0.6 0.5 1.0 2.0 3.3	Tr. Tr. Tr. Tr.	0.4 0.2 0.2 0.3 0.4	5.0 4.6 5.7 8.3	4.9 4.9 6.4 9.8	9.9 9.5 12.1 18.1 20.6	7.0 6.5 8.7 13.2 15.5	KC1- Ext. Al 0.2 1.4 1.2						4.5 3.0 2.1		503 Sum Cation Pct. 50 48 47 46 52	71 71 66 63 70
0-5 5-9 9-13 13-20 20-29 29-40	4.0 3.9 4.5 6.0 7.0 6.3	0.6 0.5 1.0 2.0 3.3 3.6	Tr. Tr. Tr. Tr. 0.1	0.4 0.2 0.2 0.3 0.4 0.4	5.0 4.6 5.7 8.3 10.8	4.9 4.9 6.4 9.8 9.8 9.8	9.9 9.5 12.1 18.1 20.6 20.2	7.0 6.5 8.7 13.2 15.5 14.9	KC1- Ext. Al 0.2 1.4 1.2 1.3						4.5 3.0 2.1 1.8		503 Sum Cation Fct. 50 48 47 46 52 51	71 71 66 70
0-5 5-9 9-13 13-20 20-29	4.0 3.9 4.5 6.0 7.0	0.6 0.5 1.0 2.0 3.3	Tr. Tr. Tr. Tr.	0.4 0.2 0.2 0.3 0.4	meq/100 6 5.0 4.6 5.7 8.3 10.8 10.4 8.8	Acidity 4.9 4.9 6.4 9.8 9.8 9.8	9.9 9.5 12.1 18.1 20.6 20.2	7.0 6.5 8.7 13.2 15.5 14.9	KC1- Ext. Al 0.2 1.4 1.2 1.3						4.5 3.0 2.1 1.8		503 Sum Cation Pct. 50 48 47 46 52 51	71 71 71 66 63 70
0-5 5-9 9-13 13-20 20-29 29-40 40-50	4.0 3.9 4.5 6.0 7.0 6.3	0.6 0.5 1.0 2.0 3.3 3.6 3.2	Tr. Tr. Tr. Tr. 0.1	0.4 0.2 0.2 0.3 0.4 0.4	5.0 4.6 5.7 8.3 10.8	4.9 4.9 6.4 9.8 9.8 9.8	9.9 9.5 12.1 18.1 20.6 20.2	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1- Ext. Al 0.2 1.4 1.2 1.3						4.5 3.0 2.1 1.8 1.6		503 Sum Cation Pct. 50 48 47 46 52 51 49	71 71 71 70 66 66 66 66 66 66
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2	Tr. Tr. Tr. Tr. 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.4 0.3	5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8	5A3a Sum Cations Cations 19.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1-Ext. Al 0.2 1.4 1.2 1.3						4.5 3.0 2.1 1.8		503 Sum Cation Pct. 50 48 47 46 52 51	71 71 71 70 66 66 66 66 66 66
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0	Tr. Tr. Tr. 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.4 0.3 0.3	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8 6.6	9.9 9.5 12.1 18.1 20.6 20.2 14.5	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1-Ext. Al 0.2 1.4 1.2 1.3 1.2 0.8 0.5						4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2	Tr. Tr. Tr. Tr. 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.4 0.3	5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8	5A3a Sum Cations Cations 19.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1-Ext. Al 0.2 1.4 1.2 1.3						4.5 3.0 2.1 1.8 1.6		503 Sum Cation Pct. 50 48 47 46 52 51 49	71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0	Tr. Tr. Tr. 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.4 0.3 0.3	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8 6.6	9.9 9.5 12.1 18.1 20.6 20.2 14.5	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1-Ext. Al 0.2 1.4 1.2 1.3 1.2 0.8 0.5						4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74	4.0 3.95 6.0 7.0 6.3 54.6 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8	Tr. Tr. Tr. Tr. 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8 6.6	9.9 9.5 12.1 18.1 20.6 20.2 14.5	7.0 6.5 8.7 13.2 15.5 14.9 13.4 11.9	KC1-Ext. Al 0.2 1.4 1.2 1.3 1.2 0.8 0.5						4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8	Tr. Tr. Tr. Tr. 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ext. Acidity 4.9 6.4 9.8 9.8 9.8 9.8 6.6	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5	7.0 6.5 8.7 13.2 15.5 14.9 10.9	KC1-Ext. Al 0.2 1.4 1.2 1.3 1.2 0.8 0.5						4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29-40 40-50 50-62 62-74 74-82	4.0 3.95 6.0 7.0 6.3 54.6 4.6	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8	Tr. Tr. Tr. Tr. 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Fact. Acidity 4.9 4.9 6.4 9.8 9.8 9.8 9.2 8.0 6.6	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5	7.0 6.5 8.7 13.2 15.5 14.9 10.9	KC1-Ext. Al 0.2 1.4 1.2 1.3 1.2 0.8 0.5	88.					4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
(in.) 0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6	602a Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8  to CI	Tr. Tr. Tr. O.1 O.1 O.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Fact. Acidity 4.9 4.9 6.4 9.8 9.8 9.8 9.2 8.0 6.6	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.5 14.8	7.0 6.5 14.9 13.2 15.5 14.9 10.2	0.2 1.4 1.2 1.3 1.2 0.8 0.5						4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29-40 40-50 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 4.6 4.6 4.6 WH4OAc	Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.2 to CI	Tr. Tr. Tr. Tr. 0.1 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ret. Acidity 4.9 4.9 6.4 9.8 9.8 9.8 9.2 8.0 6.4 b.	9.9 9.5 12.1 180.6 20.2 18.0 16.2 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.2	0.2 1.4 1.2 1.3 1.2 0.8 0.5 0.4	.es.					4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
(in.) 0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6	602a Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8  to CI	Tr. Tr. Tr. O.1 O.1 O.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	(14-	that 60			4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29 29-40 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 4.6 4.6 4.6 WH4OAc	Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.2 to CI	Tr. Tr. Tr. Tr. 0.1 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	Ret. Acidity 4.9 4.9 6.4 9.8 9.8 9.8 9.2 8.0 6.4 b.	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 4.6 4.6 4.6 WH4OAc	Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.2 to CI	Tr. Tr. Tr. Tr. 0.1 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 VMLOAC	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8	Tr. Tr. Tr. Tr. 0.1 0.1 0.1 0.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-29 29-40 40-50 50-62 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 WH4,OAc	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8 to CI	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 63 70 66 69 72
(in.)  0-5 5-9 9-13 13-20 20-29 29-40 40-50 602-74 74-82  Depth (in.)	0.56 0.49	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 67 70 66 67
0-5 5-9 9-13 13-20 29-40 40-50 50-50 62-74 74-82	4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 WH4,0Ac CMC	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.36 O.36	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 67 70 66
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74 74-82 Depth (In.)	1.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 WH4,OAc CNC	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8 to Cl	6P2a Ne Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	(Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 67 70 66 67
(in.)  0-5 5-9 9-13 13-20 29-40 40-50 562-74 74-82  Depth (in.)	1.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 WH4,OAc CNC	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.36 O.36	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 67 70 66 67
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62 62-74 74-82 Depth (In.)	0.56 0.42 0.42 0.45 0.52 4.6 4.6 4.6 4.6 0.50 0.56 0.49 0.42 0.52	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.3 O.40 O.36 O.36 O.40 O.42	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 67 70 66 67
0-5 5-9 9-13 13-20 29-40 40-50 562-74 74-82 Depth (In.)	Cs 4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 4.6 Ratios NH <sub>4</sub> OAc CSC 0.49 0.42 0.45 0.55 0.54	0.66 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6s	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62-74 74-82  Depth (In.) 0-5 9-13 13-20 20-29 29-40 40-50	0.56 0.45 0.56 0.60 0.63 0.66 0.66 0.66 0.66 0.69 0.42 0.45 0.52 0.58	0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	(Met	shod 6	۸).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62-74 74-82 Depth (In.)	0.56 0.52 0.56 0.56 0.56 0.56 0.45 0.52 0.54 0.60	602a Mg  0.6 0.5 1.0 2.0 3.3 3.6 3.2 3.2 3.0 2.8  to Cl  Ext. Iron  0.056 0.056 0.066 0.066 0.066	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 6	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 71 66 63 70 66 69 72
0-5 5-9 9-13 13-20 20-29 29-40 40-50 562-74 74-82 0-5 9-13 13-20 29-40 40-50 50-62 62-74	Cs 4.0 3.9 4.5 6.0 7.0 6.3 5.2 4.6 4.6 WH4,OAc CBC 0.56 0.49 0.42 0.52 0.58 0.62	0.66 0.5 1.0 2.0 3.3 3.2 3.2 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	5C
0-5 5-9 9-13 13-20 20-29 29-40 40-50 50-62-74 74-82 Depth (In.)	0.56 0.52 0.56 0.56 0.56 0.56 0.45 0.52 0.54 0.60	0.66 0.5 1.0 2.0 3.3 3.2 3.2 3.2 3.2 3.0 2.8 to Cl	Tr. Tr. Tr. O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.1 O.	0.4 0.2 0.2 0.3 0.4 0.3 0.3 0.2	meq/100 g 5.0 4.6 5.7 8.3 10.8 10.4 8.8 8.2 7.9	#.9 4.9 6.4 9.8 9.8 9.8 9.8 6.6 6.4	9.9 9.5 12.1 18.1 20.6 20.2 18.0 16.2 14.5 14.8	7.0 6.5 8.7 13.2 15.5 14.9 10.9 10.2	0.2 1.4 1.2 0.8 0.5 0.4	es. iles.	. (Met	shod 64	A).		4.5 3.0 2.1 1.8 1.6 1.4		503 Sum Cation Pct. 50 48 47 46 52 51 49 51 54	71 71 66 63 70 66 69 72

Soil Type: Wartrace silt loam

Soil Nos.: 962111-44-1

Iocation: Johnson County, Illinois, Tl3S, R2E, Sec. 32, NE 160, SE 40, SW 10, approximately 170 feet south of sink

depression.

Parent Material: Deep loess (pit 78 inches deep - auger to 138 inches).

Physiography: Upland loess (underlain by limestone) ridge top.

Drainage Class: Well.

133

Elmar o namont

Sampled by: R. B. Grossman and G. S. Holmgren, May 23, 1962. Described by: G. O. Walker and J. B. Fehrenbacher.

Horizon and Lincoln Lab. No.

1

Ap 0 to 5 inches. Dark grayish brown (10YR 4/2) silt loam; weak fine crumb structure; friable; many roots; 16953 pH 6.3; abrupt smooth boundary.

A2 5 to 9 inches. Brown (10YR 4/3) silt loam; very weak medium platy structure that breaks to a weak fine crumb structure; friable; many roots; pH 6.3; abrupt smooth boundary.

B1 9 to 13 inches. Yellowish brown (10YR 5/4) heavy silt loam to light silty clay loam; moderate fine and 16955 medium subangular blocky structure; firm; many small pores and roots; pH 5.3; abrupt smooth boundary.

B21 13 to 20 inches. Dark brown to brown (7.5YR 4/4) silty clay loam; strong medium subangular blocky struc-16956 ture; firm; pores and roots; pH 5.1; clear smooth boundary.

B22 20 to 29 inches. Bark brown to brown (7.5YR 4/4) and small pockets of yellowish brown (10YR 5/4) silty 16957 clay loam; strong medium subangular blocky structure; firm; peds coated with thin continuous dark reddish brown (5YR 3/4) clay films; occasional very dark gray (10YR 3/1) Fe and Mn concretions; common roots; pH 5.3; gradual smooth boundary.

29 to 40 inches. Bark brown to brown (7.5YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; peds coated with moderately thick dark reddish brown (5YR 3/4) clay films; splotches of dark yellowish brown (10YR 4/4) in the peds and wormholes filled with light brownish gray (10YR 6/2); common black (10YR 2/1) Fe and Mn concretions and common roots; pH 5.5; gradual smooth boundary.

B31 40 to 50 inches. Dark brown to brown (7.5YR 4/4) light silty clay loam with a few small pockets of yellowish brown (10YR 5/4); moderate medium and coarse subangular and angular blocky structure; firm; peds coated with moderately thick continuous dark reddish brown (5YR 3/4) clay films; many small pores and a few Fe and Mn concretions; pH 5.5; gradual smooth boundary.

B32 50 to 62 inches. Park brown to brown (7.5YR 4/4) silt loam with a few pockets of yellowish brown (10YR 16960 5/4); weak coarse angular blocky structure; friable; peds coated with thin continuous dark reddish brown (5YR 3/4) clay films and upon drying a thin coating of light gray (10YR 7/2) silt; few Fe and Mn concretions; pH 6.0; gradual smooth boundary.

C 62 to 74 inches. Dark brown to brown (7.5YR 4/4) silt loam with few common distinct grayish brown (10YR 16961 5/2) mottles; very weak coarse blocky structure to massive; friable; occasional thin yellowish red (5YR 4/6) clay film; pH 6.0; arbitrary boundary.

16962 74 to 82 inches. Same as above horizon.

138 inches. Same as two horizons above except pH 6.2.

Remarks: The soil was moist when sampled. When samples from each layer of the B horizon dried, light gray silt coatings were apparent as ped coatings. These coatings seemed to be continuous throughout the B horizon and into the C horizon where they blended with the distinct mottlings. When water was applied to the peds, the gray coatings disappeared.

Landscape Profile:

Wartrace 862111-44-1

Hosmer S62II1-44-2

SOIL Weir silt loam SOIL Nos. 850111-51-4 LOCATION Lawrence County, Illinois

SOIL SURVEY LABORATORY \_\_ Beltsville, Maryland LAB. Nos. \_\_\_\_\_\_501314 - 501318

		1816						Size clas	ss and parti	cle diamete	er (mm) 3A	1						
			Total					Sand		Sii					382	Cos.	rse fragme	nta 3
Depth	Horizon	Sand	Silt	Clay	Very	Coarse	Medium	Fine	Very fine		Int. III	Int. II				2A2		l
(in )	110112011		(0.05- 0.002)						(0 1-0.05)	0 05-0 02			(2-0 1)		Cm	<b>&gt;-</b> 2	2 - 19 Pi	19-
		4			·	Pc	of << 2	mm								Pct		6mm
0-8	A).	7.5	79.3	13.2	0.4	1.2	1.6	2.4	1.9	33.9	45.4	37.0	5.6			- -		
8-17 17-21	A2 B1	7.6	77.8	14.6 30.2	1.0	1.5	1.4	2.2	1.5	31.3	46.5	34.1 26.7	6.1			_		
21-39	B2	<u> </u>	65.1 58.7	38.2	0.3	0.5	0.6	1.4	0.9	24.9	36.3	23.8	3.6 2.2		<del> </del>	-	-	╆
39-46	B3	3.1 2.7	70.7	26.6	0.2	0.6	0.5	0.7	0.7	29.3	41.4	30.3	2.0			-		_
						_												
	6Ala	<u> </u> 	<u> </u>	<u> </u> 			<u>                                     </u>	Bulk densit	ly	401	 	Vater conte	nt Î		4CI		рН	<u>L</u> ,
Depth	Organic	Nitrogen	Ç/N		Carbonate	Ext. Iron		4Ale	4A1h	401		4B1c	482		""		8Çle	80
(ln )	carbon		"		as CaCO <sub>3</sub>	as Fe		⅓ bar	Oven dry	COLE		3a bar	15 ber		WRD		(1:1)	
	a.							'3 yar	Stell dry			31 1967	19 041					(1,
	Pct.	Pct			Pct.	Pct	g/cc	g/cc	g/cc		Pct.	Pct	Pct.		in/in		KCi	H <sub>2</sub>
0-8 8-17 17-21	0.70																	6. 4.
21-39	0.05	+			<del> </del>				1	<del>                                     </del>				<del>                                     </del>		<b>-</b>		4,
39-46	0.02				_													4.
_		ļ							_		_							
		Extractat	ole bases	5B1a	<u> </u>	6HLa	C	I EÇ	6G1d	<u>l                                      </u>	<u> </u>		latios to cia	l ıy	BD3		Base sa	uratio
Depth	6N2d	602b	6P2a	6Q2a		Ext	_										5Ç3	50
(ln)	Ca	Mg	Na	К	Şum	acidity	5A3a Sum cations		Ext Al			GEC Sum	Ext. iron	15-bar water	Ca/Mg		Sum cations	NH4
				<u>'                                     </u>	meq/100 g			•									Pct.	Pc
0-8	6.8	5.1	0.2	0.3		4.2	13.6	_									69	
8-17	2.6	1.0	0.2	0.3		7.0	11.1										37	
17-21	4.3	4.0	0.3	0.5		14.1	23.2										39 48	<u> </u>
21-39 39-46	10.7 7.0	3.7 6.7	0.6	0.5		16.9 9.6	32.4 24.3										60	
				<del> </del>								_						
		<del> </del> -						-										
	<u> </u>			Clay Frac	tion Analysi	s 7Alb-d	<u> </u>	<u>.                                    </u>			<u> </u>	<u> </u>	<u> </u>	<u>L</u>	<u> </u>	<u>I</u>	I	
Depth (in.)	Mt.	Chi	Vm	Mı.	Int	Qtz	KI.	Gibbsite										
_	-	<u> </u>	7A ————————————————————————————————————			<u> </u>	, 7.	 A3							chlorite, V			= m#
												Relative	amounts	blank = no	z == quartz,	d, dash —	not detect	ıd,
	T -									1					ioderate, xx i <b>15 y Un</b>			domi
	+	$\vdash$	-	ļ . <b>-</b>				-		-			lingis			<b></b>	·, ··	
	1	1	1	1	1	1	1	1	1	1								

Soil Type: Weir silt loam

Soil No.: S50Ill-51-4 Location: Lawrence County, Illinois. T3N, R12W, Sec. 2, NW 1/4, NW 40. Vegetation and land use: Cultivated, last crop corn.

Slope and land form: Less than 1/2 percent.
Sampled by and date: J. B. Fehrenbacher and A. A. Klingebiel. June 8, 1950.

Horizon and Beltsville Lab. No.

O to 8 inches. Brown to pale brown (10TR 5/3 - 6/3) friable silt loam, fine crumb. 501314

8 to 17 inches. Light gray (10TR 7/1), pale brown (10TR 6/3), with yellowish brown (10TR 5/8) mottles, friable silt loss, medium weak platy upper part, crumb to granular in lower part, many small very dark grayish brown (10TR 3/2) iron concretions. 501315

17 to 21 inches. Light brownish gray (10YR 6/2), light yellowish brown (10YR 6/4), with yellowish brown (10TR 5/8) mottles sticky silty clay loam, 1/2 inch to 3/4 inch blocky, some rounded edges but prismatic arrangement, heavy light gray (10TR 7/1) coatings, some very dark gray (10TR 3/1) iron concretions. 501316

21 to 39 inches. Light brownish gray (10YR 6/2), light yellowish brown (10YR 6/4), with yellowish brown (10YR 5/8) mottles very sticky heavy slity clay loss to silty clay, prismatic structure particles 1/2 inch to 1 1/2 inch wide, 1 inch to 2 1/2 inches long, break into 1/4 inch to 3/4 inch blocks, moderate light gray (10YR 7/2) coatings in 21 inch to 27 inch part, some very dark grayish brown (10YR 3/2) iron concretions. 501317

39 to 46 inches plus. Light brownish bray (10TR 6/2), light yellowish brown (10TR 6/4), with yellowish brown (10TR 5/8) mottles slightly sticky silty clay loam, thick platy to massive (horizontal cleavage pronounced), some very dark gray (10TR 3/1) iron concretions. B3 501318

SOIL Wheeling silt loam SOIL Nos. 853T11-64-5 LOCATION Massac County, Illinois

SOIL SURVEY LABORATORY Beltsville, Maryland LAB. Nos. 531723 - 531730

SUIL SURVE	Y LABORATO	KA	itsville,	Marylar	iu					LAE	3. Nos	73+15	3 - 53	T120				
I		[ 1B1b						1										
			Total			ı		Sand		Şı	lt				3B2		rse fragme	ints 381
Depth (In.)	Horizon	\$and (2-0 05)	Sift (0 05- 0 002)	Clay ( = 0 002	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5–0 25)	, Fine (0.25–0.1	Very fine (0 1–0 05)	0 05–0 02	int III (0 02 0 002)	Int <u>II</u> (0.2-0.02)	(2-0.1)		Cm	2A2 >- 2	2 - 19 Pr	19 ~ 76
	ļ	-		_	· *	Pc	t. of -< 2	mm	<u> </u>							Pct	_ <	76mm
0-7 7-113 113-143	Ap 8. A2 Bl 8.	20.4	59.9	19.7	0.2	0.6	0.7	7.3	11.6	21.8	38.1	39.9	8.8			-		
14 <del>]</del> -20 20-31 31-36	B21 B22 B3 a	25.7 35.2	42.4 36.8	31.9 28.0	-	0.3	0.5	9.5 12.9	15.4 21.8	18.2 17.2	24.2 19.6	42.4 51.4	10.3 13.4			-		
36-45 45-52	cs cī	42.8 34.3	33.8 39.4	23.4 26.3	-	0.2	0.5	19.0 9.0	23.1 24.7	16.5 18.9	17.3 20.5	57.6 51.9	19.7 9.6			-		
Death	6Ala	*****	0.00				_	Bulk densit	<del>-</del>	4D1		ater conte			4C1		pH	l
Depth (in )	Organic carbon	Nitrogen	C/N		Carbonate as CaCO <sub>3</sub>	Ext iron as Fe		4Ale ⅓ bar	4A1h Oven dry	COLE		4B1c ⅓s bar	482 15 bar		WRD		8Cic (1 1)	8Cla (1:1)
	Pct	Pct			Pct	Pct	g/cc	g/cc	g/cc		Pet,	Pct.	Pct.		IN/in		KCI	H <sub>2</sub> O
0-7 7-11 <del>]</del> L1 <del>]</del> -14]	0.26																	5.6
나는-20 20-31 31-36	0.10 0.08					•												4.8 4.6
36-45 45 <b>-</b> 52	80.0 80.0																	4.7
	-	Extractab	ie bases 5	Bla		6на	C	EC	6G1d			R	atios to cia	y	8D3		Base sat	uration
Depth (In )	6N2d Ca	602b Mg	6P2a Na	6Q2a K	Sum	Ext acidity	5A3a Sum		Ext Al			CEC Sum	Ext Iron	15-bar water	Ca/Mg		5C3 Sum	501 NH <sub>4</sub> 0Ac
	<del></del>	l I		<u> </u>	   meg/100 g		cations '	1	 								cations Pct.	Pct
0-7 7-11 <del>2</del> 13-143	4.2	2.8	tæ.	0.2		4.6	11.8										61	
4 <del>§</del> -20 20-31 31-36	3.0 2.0	4.6 3.4	tr. tr.	0.4		11.5 12.1	19.5 17.9										41 32	
36-45 45-52	1.3 1.6	2.7 3.3	0.1 tr.	0.3		11.8 13.6	16.2 18.9										27 28	
····																		
				Clay Fract	on Analysis	7Alb-d		l				A. W	n analy	rses o	n these	now1	ZONA .	
Depth (In.)	Mt.	Chi.	Vm. 7A2	Мі	Int	Qtz.	KI	Gibbsite					,	,				
	4		X-ra			-	<b>-t</b> 7/	3							chiorite, Vi r = quartz,			= тка,
					r <u>-</u>							Relative	amounts t	plank = not	t determine oderate, xxx	d, dash 🕳 i	not detecte	

Soil Type: Wheeling silt loam Soil No.: S53Ill-64-5

Location: Massac County, Illinois. T.14 S., R. E., Sec. 22, NW 1/4, SE 40, NE 10 along west side of newly graveled road about 300 feet south of 1/4 line fence, in 4 foot road bank with 3 foot road cut. Vegetation and land use: Thin grass and weed cover (formerly cultivated).

Slope and land form: 1 1/2 percent to east across road.

Sampled by and date: J. B. Fehrenbacher, R. H. Ruhe, H. L. Wascher. September 14, 1953.

Horizon and Beltsville Lab. No.

0 to 7 inches. Dark yellowish brown (10YR 4/4), 1/8 - 1/4 inch irregular crumb to fragmental 531723 silt losm.

7 to 11-1/2 inches. Yellowish brown (9TR 5/6), very weak thin platy compact and rather hard 531724 silt losm.

11-1/2 to 14-1/2 inches. Strong brown (7.5TR 4/6), 1/4 inch irregular subangular blocky 531725 light silty clay loam.

14-1/2 to 20 inches. Brown (7.5YR 4/5), 1/4 - 3/8 inch subangular blocky with few faces splotched with iron-manganese silty clay loam with some fine sand. B21/ 531726

B22 20 to 31 inches. Dark brown (7.5YR 4/4), 1/4 - 1/2 inch subangular to nutlike splotched black (7.5YR 2/1), silty clay loam with fine sand. 531727

31 to 36 inches. Dark brown (7.5YR 4/4), 1/2 - 3/4 inch subangular with heavy iron-manganese splotches of black (7.5YR 2/1), silty clay loam with sand grains. 531728

36 to 45 inches. Dark brown (7.5YR 4/4), 1/2 - 2 inch fragmental to massive with small ironmanganese concretions and splotches, mod. compact, slightly cemented, clay loam. 531729

45 to 52 inches. Dark brown (7.5YR 4/4) streaked with light yellowish brown (10YR 6/4) clay 531730 loam or light silty clay loam with fine sand and small iron-manganese concretions and splotches.

52 to 80 inches. Stratified silt loam, fine sandy loam, light silty clay loam, etc.

## Not Sampled

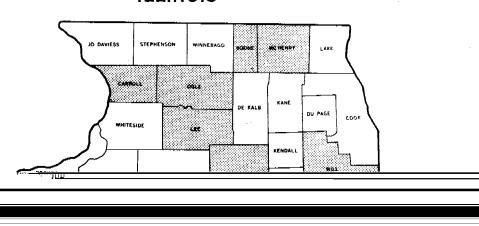
Notes: Taken on low terrace (5-6 feet above bottom) in former Ohio river (now Bay creek) basin. Material above 31 inches may be partly losss of Peorian age, that below 31 inches is probably mostly deposited by waters from high floods of Ohio and/or Wabash rivers. Elevation between 340 and 360 feet contour lines. Profile very dry to 30 inch depth.

SOIL SURVEY LABORATORY Beltsville, Maryland

\_\_\_\_ LAB, Nos \_\_**501303 - 501308** 

OIL SURVE	ET LABUKAIL		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	inai yia	10					LAI	B. Nos _	)VI,3V	<u>, - )u.</u>	1300				
		181h Size class and particle diameter (mm) 3A1																
			Total	,				Sand			ilt				382	Ços	rse fragm	ents 3
Depth	Horizon	Sand	Sift	Clay	Very	Coarse	Medium	Fine	Very fine		int III	Int. II				2A2 >- 2	1 , ,,	1,,
(in )		(2-0.05)	(0 05- 0 002)	( < 0.002	) coarse (2-1)	(1-0.5)	(0.5-0 25	i) (0.25–0 I	(0 1-0.05)	0.05-0 02	2 (0 02-	(0.2–0 02	(2–0 1)		Çm	- '	2 - 19	19-
		-					t of == 2	mm	<u>'</u>		- 0 002			-		Pct		76mm
0-7 7-15	A1 A2	5.3	85.7	9.0 14.8	0.7	1.5	0.7	1.1	1.3	36.7	49.0	38.7	4.0					
15-19	B1	5.4 2.3	79.8 59.8	37.9	0.2	0.5	0.8	0.8	8.0	32.0 25.7	47.8 34.1	33.2	1,5			tr.		
19-28	B2	1.6	61.6	36.8	-	0.1	0.2	0.5	0.8	28.5	33.1	29.5	0.8		— ·	<u> </u>		$\vdash$
28-38	B3	1.3	71.1	27.6	-	0.1	0.1	0.4	0.7	32.8	38.3	33.7	0.6			-		
38-55	CI	1.6	77,3	21.1	-	0.2	0.2	0.4	8,0	37.2	40.1	38.3	0.8			-		
-																		H
_	011-	†			<u> </u>	! 		Bulk densi	ty		v	Vater conte	nt .	<u> </u>	<u> </u>	<u> </u>	pH	1
Depth	6A1a Organic	Nitrogen	Ç/N		Carbonate	Ext iron		4Ale	4A1h	4D1		481c	4B2	1	4C1		8Clc	8C1
(tn.)	Carbon	•			as CaCO <sub>3</sub>	as Fe		⊁ bar	Oven dry	COLE		⅓ bar	15 bar		WRD			(1 :
	8.							·a va'	V			'a Dar	TO DAL				(1.1)	1 .
	Pct	Pct			Pct	Pct.	g/cc	g/cc	g/cc		Pct	Pct.	Pct.		ın/in		KCI	H2
0-7 7-15	1,16																	5.
15-19	0.16																	?·
19-28	0.22																	5.
28-38 38-55	0.13 0.12																	6.
347-77	V.12							<del>                                     </del>				-					<del> </del>	7.0
		<u> </u>		ļ			<u> </u>	<u> </u>										
		Extractat	ole bases !	581a	_	6HLa CEC			6G1d			R	atios to cla	ıy	803		Base sat	uratio
Depth	6N2d	602b	6P2a	6Q2a		Ext.			_								5C3	5¢
(in.)	Ca	Mg	Na	K	Sum	acidity	5A3a Sum		Ext Al			CEC Sum	Ext	15 bar water	Ca/Mg		Sum	NH <sub>4</sub> 0
	1.	l					cations	l	I								cations	'
Q-7	2.8	0.9	0.1	0.2	meq/100 g	6.7	10.7	1	<del></del>								Pct 37	Pct
7-15	4.3	2.0	0.1	0.2		4.1	10.7										62	
15-19	11.2	7.8	0.2	0.4		9.6	29.3	-									67	
19-28 <b>28-3</b> 8	14.1	9.8	0.2	0.4		6.8 2.7	31.3 24.6										78 89	
38-55	10.3	6.3	0.2	0.3		2.4	19.5										88	
				<u> </u>														
				Clay Fract	ion Analysis	7Alb-d			·					<u>,                                      </u>				<u> </u>
Depth	Mt	Chi	Vm.	Mı	Int,	Qtz.	кі	Gibbsite										
(In )		•			,													
		<u> </u>	7A2		<u> </u>		7.	 A3 <b></b>				Mt = M	ootmoriika	ute. Chi —	chlante, Vr	n = Vermi	cuirte m	= mics
	-		A FB					<del>~</del>							. = quartz,			
															determined			
	<u> </u>											tr = tra	çe, x = sm:	all, xx = m	oderate, xxx	= abunda	nt, xxxx =	domin
													termi:		s by Un	ivers	ity of	•
	T					_		т —				1.	LUULL					

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